

THE IRON AGE

New York, January 10, 1918



Nickel Steel

Our CLEVELAND WAREHOUSES contain a large, well assorted stock of 3 1/2 per cent. NICKEL STEEL.

Prompt shipment can be made of any of the following sizes and shapes.

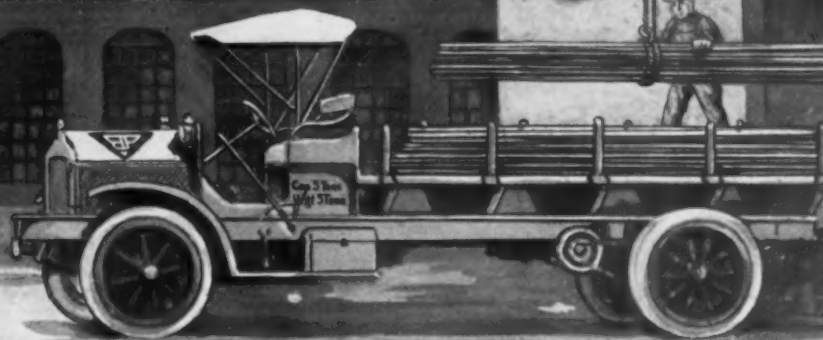
5/16" to 1 9/16" hexagon 1/4" to 5" round cold drawn
1 1/16" to 4 1/16" hot rolled

The Betz-Pierce Co.

"STEELS OF QUALITY"

2230-40 East Ninth Street Cleveland

Alloy Steels for Every Class of Work
3% NICKEL
STEELS BUREAU
CHROME VANADIUM



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J. R. Fuller, 7 to 9 West Canal Street, Pittsburgh, Pennsylvania
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TABLE OF CONTENTS - - - 153

Buyers' Index Section 338
Wanted Section 316

ADVERTISING INDEX - - - 355

Contract Work Section 325
Help and Situations Wanted 326
Business Opportunities 318

Clearing House Section 272
Professional Notices 324

H. KOPPERS COMPANY

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BY-PRODUCT
COKE OVENS

Ammonia Recovery Apparatus
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By-Product Coke Plants and Auxiliaries

Union Arcade Building
PITTSBURGH, PA.

THE IRON AGE

New York, January 10, 1918

ESTABLISHED 1855

VOL. 101: No. 2

Government Will Not Buy for Railroads

Director General McAdoo Does Not Intend to
Take Over Purchasing Departments—Liberal
Policy Will Be Expected in Ordering Equipment

WASHINGTON, Jan. 8.—Representatives of railroad equipment producers from all the leading manufacturing centers have visited Washington during the past week to ascertain the policy that will be pursued by the Government with respect to purchasing on behalf of the railroads, now that they have been taken over for operation as a unified transportation system. On the highest authority it can be stated that the Government does not now contemplate buying for the roads and that the purchasing departments of the several systems will be permitted to do their own buying as heretofore. It is altogether probable, however, that the Government will insist upon a very liberal policy on the part of the roads in the purchase of rails, steel freight cars, locomotives and all other equipment that may be necessary to put the carriers on a footing of the highest possible efficiency for the expeditious handling of freight.

The expenditures of the railroads of the country for all forms of material and equipment during the past half dozen years have been much below normal, considering the expansion of the business of the country and especially in view of the demands upon the roads since the beginning of the European war in August, 1914. The reason for this economy has not been far to seek. Whether justly or unjustly, the railroads have been the target of adverse legislation, both state and federal, and of demagogical attack, and their pleas for adequate revenues have been almost uniformly rejected. As a result, and because of the heavy advance in the cost of everything consumed in the construction and maintenance of railroads, terminals, etc., money has been spent only where absolutely necessary to keep trains moving, and additions and betterments have been postponed to better times.

Freight Rate Questions

The Interstate Commerce Commission, which has ample facilities for acquiring exact information concerning the condition of the properties of all the railroad systems of the country, has exhibited a marked unwillingness to incur criticism for granting increased freight rates, no matter what the showing of necessity might be, and demagogues in Congress have been glad to take advantage of this lack of courage to threaten the commission with drastic inquisitorial investigations in the event that advances should be allowed in important pending cases. In fact, the commission has been robbed of its quasi-judicial character and has been

bullied by Congress and by a certain section of the public press to such an extent that the railroads have despaired of securing justice at the commission's hands on the basis of necessity demonstrated by undeniable proof.

Under these circumstances it is not surprising that the railroads should have felt it necessary to keep their expenditures down to the lowest possible level, especially in view of the fact that Congress, with characteristic inconsistency, has forced them to spend large additional sums in increased wages under the provisions of the Adamson law. Railroad executives have felt that it was wise policy to devote their energies to the efficient handling of existing equipment and to purchase little or no new rolling stock. The enormous increase in the traffic of the past calendar year has forced some additional railroad buying, but nothing like what would have taken place had the carriers generally been in easy circumstances.

New Equipment

With the taking over by the Government of supreme control of the railroads and the unification of all systems for convenience of operation, the question of new equipment assumes great importance. While governmental operation will introduce a new factor of flexibility in equipment, making it possible for roads in certain sections where traffic is below capacity to furnish locomotives and cars for use in the congested districts, yet the relief thus afforded promises to be inadequate and much additional equipment will be needed. Much attention is therefore being given to the question as to how this is to be provided and especially as to whether purchases are to be authorized and perhaps actually made by the Government.

In the course of a conference held at the Treasury Department during the past week, Mr. McAdoo, the new director general of transportation, in reply to a question, made the interesting statement that the Government did not intend to take over the purchasing departments of the roads and that each system would do its own buying as heretofore. He also intimated that the roads would be expected to use their best efforts to render their equipment adequate to the demands made upon it. Mr. McAdoo's statements are taken here to mean that where individual railroads actually need rails, cars, locomotives, etc., they will procure them and that the question as to whether current revenues on the basis of recent returns are adequate to provide such equipment will be a secondary consideration.

The guarantees of the Administration, which Congress is expected to redeem, that the roads shall be permitted to make net earnings based upon the average of the past three years, are counted upon to cover all purchases of new material, provided the absolute necessity of each transaction can be demonstrated. Investors in railroad securities, therefore, have nothing to fear from a reasonable expansion in the purchasing programs of the railroads; on the contrary, the business now being offered the leading railroad systems is so much in excess of their present capacity that all added facilities, especially in the form of locomotives and cars, will show abnormally high earnings from the moment they are put into service.

Proposed Government Corporation

Notwithstanding the tendency in Congress to assail the management of the railroads and to demand impossible performances, many members of both houses, even among the so-called progressive element, have been impressed with the fact that there is to-day an actual car shortage so great as to constitute an almost insurmountable obstacle to the proper handling of the commerce of the country. To meet this situation, various projects are being considered. One plan that is attracting considerable attention has been put forward by Representative Lenroot of Wisconsin, the leader of the Progressive party in the House, who has prepared a bill providing for the creation of a Government-owned corporation to acquire railroad equipment for leasing to the several railroad systems.

The United States Equipment Corporation, as it is called in Mr. Lenroot's measure, would be provided through a congressional appropriation with a capital of \$100,000,000, which, with the approval of the President of the United States, may be increased to \$500,000,000. All of the directors of the corporation must be members of the Interstate Commerce Commission except the Secretary of the Treasury, who would be a director ex-officio, but the general manager of the corporation must be a practical railroad man. It would be the function of the corporation to immediately purchase or cause to be constructed locomotives and cars to the full amount of the corporation's capital and to lease them to the railroads at reasonable rentals. In order that there may be no undue concentration of this equipment in certain systems, the bill provides that no lease shall run for more than a year, thus permitting periodical readjustments in accordance with the necessities of the transportation situation as it may develop from time to time.

Funds for the Corporation

A feature of Mr. Lenroot's bill, which was worked out before the President decided to take over the roads and which, therefore, may be modified should the bill receive favorable consideration at the hands of the House Committee on Interstate and Foreign Commerce, provides that the equipment corporation may be supplied with additional funds for the purchase of cars and locomotives by the imposition of a special tax upon railroads where their net income exceeds 7 per cent of their invested capital after deducting all other taxes paid, including present and prospective income and excess profits taxes. Of such net income in excess of 7 per cent the equipment corporation is authorized to take a maximum of 70 per cent, the money to be used in exactly the same manner as the original capital provided by Congress. Mr. Lenroot takes the position that such a tax would be approved by the public and would go far toward re-

moving existing opposition to increase of rates. Any road receiving an increase which it did not need in order to secure a fair return to its stockholders would pay the bulk of it back to the Government in this tax and it would be used exclusively in providing transportation facilities for the service of the public.

Whether the Lenroot bill or any similar measure is approved by Congress, there is good reason to believe that the Government will authorize a very substantial increase in railroad equipment as one of the first steps in solving the big transportation problem now confronting it. At this writing, however, it seems likely that this movement will take the form of encouragement to individual railroad systems to increase their respective quota of cars and locomotives and that for the present, at least, the railroad managements will continue to do their own buying.

W. L. C.

Revision of Excess Profit Tax Law Proposed

What is called a new excess profit tax plan has been formulated by Christian Girl, president Standard Parts Co., Cleveland, and director of military truck production section, Quartermaster's Department, Washington. As issued in a leaflet form by the Motor and Accessory Manufacturers Association, 33 West Forty-second Street, New York, the proposal provides for a reduction in the percentage of tax as the percentage of profits increases. It is suggested, for example, that the tax might be 35 per cent on the difference between 9 per cent and 15 per cent of excess profits; a less per cent on the range between 15 and 20 per cent; a less per cent for the range of 20 to 25 per cent and successive decreases of the percentage of tax for the successive increases on total profits. He would suggest that a tax of 80 per cent be placed on profits above 50 per cent of capitalization, unless these profits are invested in government securities, in which case no tax should be levied.

Allowance for the percentage of profit on turn over of sales in relation to the capital invested should also be considered, he holds. The rate of tax should be the same on all industries engaged in the same kind of business, but a different rate depending on the profits in terms of the turn over. To secure a rapid exchange of money, it is also suggested that 40 per cent of all profits above government taxes should be distributed to the stockholders of corporations in the shape of cash dividends or government securities, and that a definite percentage of profits above government taxes should be distributed to employees. The Government, it is added, should collect 10 per cent of the amount of money so distributed to stockholders and employees, as taxes on special income from corporations. Mr. Girl believes that this plan will raise more money than the present one, that it will make the country prosperous and will consolidate labor and capital, all to bring about maximum production.

Manufacturers of farm tractors are planning a very extensive selling campaign for the coming year. At a recent meeting of the tractor and thresher department of the National Implement and Vehicle Association held in Chicago, it was decided to hold eight tractor demonstrations during 1918. One of these, which is expected to be the largest, will take place in Cleveland Aug. 18-19. The demand for tractors has been heavy the past year and is growing, this probably being to some extent due to the heavy drain of the war on the supply of horses, the scarcity of farm hands and the increase in the cultivated acreage.

The Municipal Civil Service Commission, Municipal Building, New York, will receive applications until Jan. 22, for the position of inspector of iron and steel construction.

Spacing Mechanism for Drilled Holes

Accurate spacing of drilled holes in jigs, fixtures, and other work is claimed for a mechanism that has been brought out by Craley Mfg. Co., Lancaster, Pa. It is emphasized that its use does away with the need for laying out holes which are to be drilled and reamed in jigs, dies, master plates, models, etc., and the accuracy of the device enables the services of a mechanic on inspection work for a considerable period of time to be eliminated.

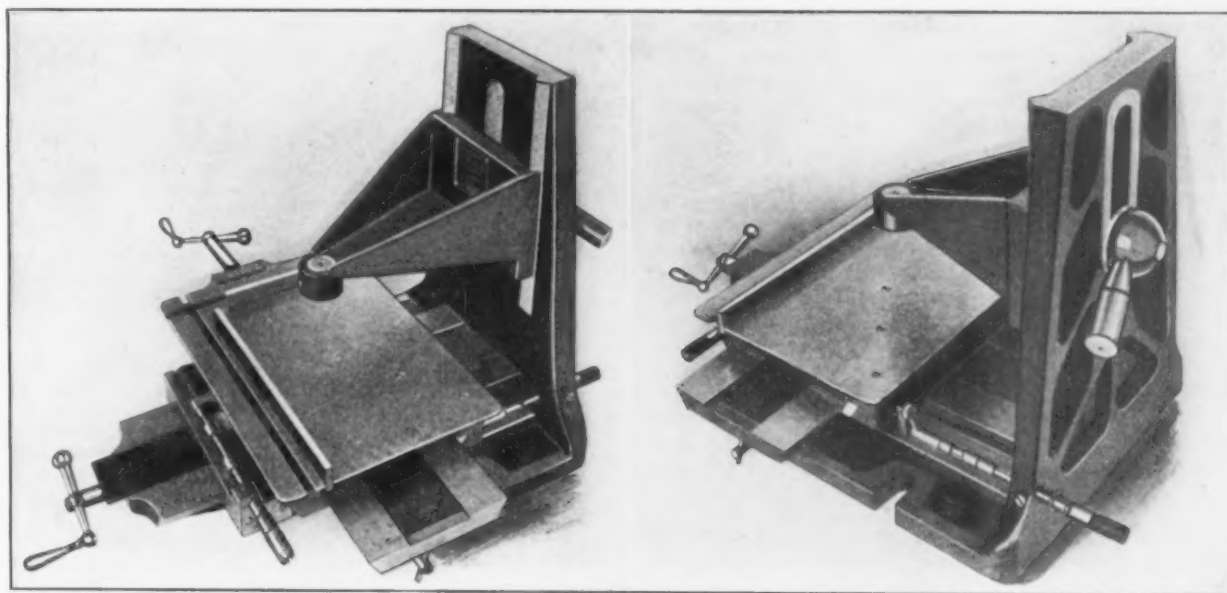
The device which is known as the "master tool-maker" has a compound table measuring 8 x 11 in. with slides at right angles. These slides are operated by two screws which are controlled by conventional ball

tion and proceed with the other holes. After the work has been completed a plug is placed in the hole which marks the position at which the larger hole is to be drilled. The work is then transferred to a lathe where the hole is bored and reamed.

Engineers Needed

The Army and Navy Staff Departments continue to demand men of engineering experience, especially in industrial lines. At present the outlook is that this demand will continue throughout the period of the war.

In calling attention to this, the United States Public Service Reserve, Washington (where records of men willing to serve when called will be kept on file), points



The Accurate Spacing of Holes in Jigs, Fixtures and Similar Work Is Accomplished by a Mechanism Which Is Clamped in Position on the Table of the Drilling Machine and Adjusted to Give the Desired Relation Between Successive Holes

crank handles. Approximate settings are secured by manipulating these handles and micrometer heads and a set of standard distance bars are employed to give the accurate spacing required for the holes.

In operation the mechanism is clamped in place on the table of a drilling machine so that the drill bushing lines up with the axis of the drilling machine spindle. In this way holes may be drilled the same as with ordinary jigs. The work table is then adjusted until both micrometers read zero against stops on the table. These serve as anvils for the micrometer heads and the center of the drill bushing is then located over the intersection of the guide strips of the work table. In starting to locate the first hole that is to be drilled after the work has been clamped against the guide strips an approximate setting is secured through the movement of the two slides of the table. The final location is obtained by the use of distance bars and micrometer heads, it being pointed out that the arm which supports the drill bushing should be set to bring the bushing as close to the work as possible. The table is locked in position by a clamp before the drilling operation is commenced.

Any number of holes can be located in the work which bear various relations to each other and it is possible to manipulate the table slides and employ combinations of micrometer heads and distance bars to locate a hole so that the proper relation is secured between successive holes. The distance bars furnished enable any combination of even inches to be secured up to the capacity of the machine, while the adjustment for fractional parts of an inch is obtained by the micrometer heads. The equipment regularly furnished includes a set of 11 distance bars, $\frac{1}{4}$ in. in diameter and ranging from 1 to 11 in. in length, the difference between successive bars being 1 in., and two special micrometer heads.

Although the machine is designed to handle holes up to $\frac{5}{8}$ in. in diameter, ones of larger size can also be taken care of. The method of procedure in such a case is to drill and ream a smaller hole in the desired loca-

out that a man of engineering experience has a rare combination of opportunities open to him, which are not open to the average patriotic American, as follows:

1. To serve the country in his most effective capacity.
2. To keep in touch with his own profession, with the result that his patriotic service will not have caused him to become rusty by the time peace returns.
3. To become a commissioned officer and receive much better pay than the average man who has wholly subordinated personal interests and now works for the national good.
4. To perform his service usually without leaving the United States.

Important Wage Advances

SEATTLE, Jan. 3.—Important wage increases have been made to 2500 steam engineers, winch and crane-men, donkey engine drivers, firemen, and other employees in Seattle shipyards as the result of negotiations between representatives of steel and wooden shipyards and of the International Union of Steam and Operating Engineers, conducted with the sanction of the Wage Adjustment Committee of the United States Shipping Board. The Government bonus of 10 per cent for men working full week of 48 hours has in shipyards met with general approval and it is believed by shipbuilders will aid in solving the labor problem. The ruling will add 60,000 to Seattle payrolls monthly.

Among the calendars for 1918 two already received are conspicuous. That of the Youngstown Sheet & Tube Co., Youngstown, Ohio, is featured by twelve two-color illustrations of operations in the manufacture of iron and steel, from photographs taken in the company's plants. The Cleveland Twist Drill Co., Cleveland, in "The Man Behind the Gun," the color piece which surmounts its 1918 calendar, has embodied the thought of the machinist's vital importance to the great war machine.

Appeal to Iron and Steel Industry

Manufacturers Asked to Adjust Prices in
Harmony with Those Agreed Upon—Atten-
tion Called to President Wilson's Statement

JUDGE E. H. GARY, chairman of the Committee on Steel and Steel Products of the American Iron and Steel Institute, has issued the following statement, which will probably be his last announcement for some time.

"Referring to the statements of the chairman of the Committee on Steel and Steel Products of the American Iron and Steel Institute dated Nov. 13, Nov. 20, and Dec. 22, 1917, recommending prices for certain steel products to be adopted as maximum prices, to take effect immediately, to apply to the requirements of the United States Government, to the war requirements of the Allies and for domestic consumption within the United States, the committee now makes similar recommendation to the iron and steel industry in respect of the prices and differentials below stated.

"The recommendations so far made by the committee as to maximum prices, differentials, etc., cover the principal iron and steel products, and the committee does not at present deem it necessary to make further specific recommendations.

"In view of President Wilson's statement under date of Nov. 5, 1917, that the iron and steel manufacturers have agreed promptly to adjust the maximum prices of all iron and steel products other than those on which prices have been agreed upon, the committee now recommends to the iron and steel industry that the prices of all iron and steel products, maximum prices for which have not been agreed to with the War Industries Board or recommended by the committee, be promptly adjusted so as to be in line with the basic intermediate and finished products for which definite maximum prices have been established. The committee relies upon the patriotism and good faith of the iron and steel industry to accomplish this, and expresses the hope that all connected with the industry will co-operate in the proper spirit to this end.

On Dec. 28, 1917, President Wilson authorized the following announcement:

The President has approved the recommendation of the War Industries Board that the maximum prices heretofore fixed by the President upon the recommendation of the board upon ore, coke, pig iron, steel and steel products, subject to revision on Jan. 1, 1918, be continued in effect until March 31, 1918. No new contracts calling for delivery of any of said commodities or articles on or after April 1, 1918, are to specify a price unless coupled with a clause making the price subject to revision by any authorized United States Government agency, so that all deliveries after that date shall not exceed the maximum price then in force, although ordered or contracted for in the meantime.

It is expected that all manufacturers and producers will observe the maximum prices now fixed.

"The committee calls the especial attention of the industry to the above announcement, which applies to all prices, differentials and extras recommended by the committee."

Pig Iron Differentials

Special Car Wheel or Cylinder Iron

The price for Virginia or other special car wheel or cylinder irons containing over 1.00 per cent manganese may be made by adding to the base price of \$33 the following differentials for manganese:

Manganese...	1.00 per cent to 1.50 per cent add	\$0.50 per ton
Manganese...	1.50 per cent to 2.00 per cent add	1.50 per ton
Manganese...	2.00 per cent to 2.50 per cent add	2.50 per ton
Manganese...	2.50 per cent to 3.00 per cent add	3.50 per ton
Manganese...	3.00 per cent to 3.50 per cent add	4.50 per ton
Manganese...	3.50 per cent to 4.00 per cent add	5.50 per ton
Manganese...	4.00 per cent to 4.50 per cent add	6.50 per ton
Manganese...	4.50 per cent to 5.00 per cent add	7.50 per ton
Manganese...	5.00 per cent to 5.50 per cent add	8.50 per ton
Manganese...	5.50 per cent to 6.00 per cent add	9.50 per ton

For iron with phosphorus over 0.04, use following scale:

Phosphorus	Add to Base Price, Per Ton	
	For Copper-free Iron	For Copper-bearing Iron
0.04 maximum	\$20.00	\$17.00
0.045 maximum	17.50	15.00
0.05 maximum	15.00	13.00
0.055 maximum	12.50	11.00
0.06 maximum	10.00	9.00
0.065 maximum	6.50	6.50
0.070 maximum	5.50	5.50
0.075 maximum	5.00	5.00
0.075 to 0.09 maximum	Use Bessemer price	Use Bessemer price

Note.—The above should appear at the end of the list of pig iron differentials dated Nov. 2, 1917, immediately after the paragraph showing scale of advances for phosphorus below 0.04 and silicon in excess of 2 per cent.

Iron Rolls

Prices for condensed grain (sand) and chilled iron rolls recommended by the Committee on Steel and Steel Products of the American Iron and Steel Institute, Jan. 7, 1918.

The following prices are subject to the usual customs of the trade, as regards terms, guarantees, adjustments, replacements, etc. The delivery point is f.o.b. makers' works, but the prices include an allowance for actual freight, in accordance with published freight rates, to the freight station of purchaser, provided same does not exceed 20c. per 100 lb. All freight in excess of 20c. per 100 lb. to be paid by purchaser. The freight allowance does not include any additional charges at destination (for switching service, spotting of cars, drayage, cartage, transfer, ferry car service) or any other expense over and above that covered by the published freight rate applying to the regular delivery station.

Plain Chilled Rolls

Under 8 in. diameter	10.00c. per lb.
8 in. diameter and under 10 in.	8.75c. per lb.
10 in. diameter and under 13 in.	7.95c. per lb.
13 in. diameter and under 21 in.	7.15c. per lb.
21 in. diameter and under 24 in.	6.15c. per lb.
24 in. diameter and under 33 in. 91 in. long	5.70c. per lb.
24 in. diameter and under 33 in. 91 in. long and over	6.15c. per lb.
33 in. diameter and under 35 in.	6.15c. per lb.
35 in. diameter and under 39 in.	7.20c. per lb.
39 in. diameter and under 43 in.	8.30c. per lb.
43 in. diameter and under 45 in.	10.25c. per lb.
Rail rolls, 20 in. diameter and over, with open chilled finishing pass on one or both ends	7.15c. per lb.
Rail rolls, under 20 in. diameter, with open chilled pass on one or both ends	7.45c. per lb.

Plain rolls, part chilled, same price as chilled rolls of like diameter.

Plain chilled rolls requiring over 1½-in. chill, ¼c. additional, and at purchaser's risk of breakage, regardless of excessive depth of chill.

Sand rolls, with but one or two plain chilled passes, not less than plain chilled rolls of like diameter.

All other rolls having inclosed chilled passes or grooves, not less than 1.7c. per pound higher than plain chilled rolls of same diameter; chills for making same to be charged for at not over 10 per cent above cost, and when paid for may be delivered to customers on demand.

Gap rolls for shovel mills, ½c. per pound additional

Sand Rolls

Under 10 in. diameter	7.95c. per lb.
10 in. diameter and under 13 in.	7.15c. per lb.
13 in. diameter and under 21 in.	5.90c. per lb.
21 in. diameter and under 34 in.	5.50c. per lb.
34 in. diameter and over	5.90c. per lb.

Iron Pinions

Under 10 in. diameter	8.35c. per lb.
10 in. diameter and under 13 in.	7.55c. per lb.
13 in. diameter and under 21 in.	6.35c. per lb.
21 in. diameter and over	5.90c. per lb.

Boxing or crating: Two per cent (2%) of face of bill additional.

Iron Rolls

The above prices for rolls are subject to a discount of ¼c. per lb. where the purchaser sells and ships to the maker the broken and worn out scrap rolls and pinions produced in operation of its mills, not to exceed 70 per cent in weight of new rolls received, at not over \$30. per ton of 2240 lb. in trade account, f.o.b. seller's mill. Any excess freight over \$2.50 per ton, necessary to transport such scrap rolls and pinions to works of maker to be paid by the seller of the scrap rolls and pinions.

Tool Steel

Base prices and extras recommended by the Committee on Steel and Steel Products of the American Iron and Steel Institute, Jan. 7, 1918.

All prices f.o.b. point of shipment, and net without discount.

High Speed Steel

Base prices:	Shipments from Mill	Makers' Ware- house Stocks
High-speed steel	\$2.00 per lb.	\$2.01 per lb.
Tungsten finishing steel	.65 per lb.	.66 per lb.

Subject to established customs of trade, and with following extras, all dimensions inclusive, intermediate sizes take the next higher extra:

Base Sizes

ROUND, SQUARE AND OCTAGON

¾ in. to 2 in. inclusive

FLAT

¾ in. to 2 in. thick by ¾ in. to 2 in. wide

Extra Sizes

ROUND, SQUARE AND OCTAGON

Inches	Extra Per Lb. Cents	Inches	Extra Per Lb. Cents
9/16 to ½	2.0	3½ to 4	3.5
7/16 to ¾	3.5	4¼ to 4½	4.0
5/16 to 11/32	6.0	4¾ to 5	4.5
¼ to 9/32	8.5	5¼ to 5½	5.0
2¼ to 2½	2.0	5¾ to 6	5.5
2½ to 3	2.5	6¼ to 6½	6.0
3¼ to 3½	3.0	6¾ to 7	6.5

Extra Sizes

FLAT

Inches	Extra Per Lb. Cents	Inches	Extra Per Lb. Cents
¾ x 3/16	40.0	¾ x 1½ to 5	2.5
¾ x ¼	30.0	7/16 x ½ to 1	3.0
¾ x 5/16	20.0	7/16 x 1¼ to 5½	2.5
¾ x ¾ to 2	14.0	½ x ¾ to 1	2.5
3/16 x ¼ to 3	14.0	½ x 1½ to 6	2.0
¼ x 5/16 to ½	8.0	9/16 x ¾ to 1	2.5
¼ x ¾ to 1	5.0	9/16 to 1½ to 6	2.0
¼ x 1½ to 4	3.0	¾ to 2 x ¾ to 2	0.0
5/16 x ¾ to ¾	5.0	¾ to 2 x 2¼ to 4	2.0
5/16 x ¾ to 1	3.5	¾ to 2 x 4¼ to 7	4.0
5/16 x 1½ to 4½	3.0	2¼ to 3 x 2¼ to 4	2.0
¾ x 7/16 to ¾	3.0	2¼ to 3 x 4¼ to 7	4.0
¾ x ¾ to 1½	3.0		

Intermediate sizes take the next higher extra.

Annealing, 2c. per lb. extra.

Bevels, same classification as flats, plus 10c. per lb. for shape.

Cutting to Specified Single and Multiple Lengths

	Per Lb. Cents
24 in. and over	1.0
18 in. to 23 15/16 in.	2.0
12 in. to 17 15/16 in.	3.0
6 in. to 11 15/16 in.	4.0
Less than 6 in., special price.	

FORGED DISKS

	Extra Per Lb. Cents
Weighing above 25 lb.	6
Weighing 15 to 25 lb.	10
Weighing 10 to 15 lb.	12
Weighing 7½ to 10 lb.	14
Weighing 5 to 7½ lb.	16
Weighing 3 to 5 lb.	18
Weighing 2 to 3 lb.	22
Weighing 1 to 2 lb.	24
Annealing	2c. per lb. extra

FORGED DIE BLOCKS

	Extra Per Lb. Cents
Weighing above 25 lb.	4
Weighing 15 to 25 lb.	6
Weighing 10 to 15 lb.	10
Weighing 7½ to 10 lb.	14
Weighing 5 to 7½ lb.	16
Weighing 3 to 5 lb.	18
Weighing 2 to 3 lb.	22
Weighing 1 to 2 lb.	24
Annealing	2c. per lb. extra

Carbon Steel

Base price:	Shipments from Mill	Makers' Ware- house Stocks
Non-shrinkable tool steel	\$0.35 per lb.	\$0.36 per lb.
Special tool steel	0.23 per lb.	0.24 per lb.
Extra tool steel	0.18 per lb.	0.19 per lb.
Regular tool steel	0.15 per lb.	0.16 per lb.

Subject to established customs of trade, and with following extras, all dimensions inclusive, intermediate sizes take the next higher extra.

Base Sizes

ROUND, SQUARE AND OCTAGON

¾ in. to 2 in. inclusive

FLAT

¾ in. to 2 in. wide by 9/16 in. to 2 in. thick

Extra Sizes

ROUND, SQUARE AND OCTAGON

	Extra Per Lb Cents		Extra Per Lb Cents
2 1/4 to 3.....	1.0	7/16 to 3/4.....	1.0
3 1/4 to 4.....	1.5	5/16 and 11/32.....	2.0
4 1/4 to 5.....	2.0	1/4 and 9/32.....	3.0
5 1/4 to 6.....	2.5	3/16.....	5.0
6 1/4 to 7.....	3.0	5/32.....	10.0
7 1/4 to 8.....	3.5	1/2.....	18.0
9/16 to 1/2.....	0.5		

Extra Sizes

FLAT

Extra Per Lb. Cents		Extra Per Lb. Cents	
1/8 x 3/16.....	20.0	5/16 x 3/8 to 1/2.....	1.5
1/8 x 1/4.....	15.0	5/16 x 11/16 to 8.....	1.0
1/8 x 5/16.....	8.0	3/8 x 7/16 to 8.....	1.0
1/8 x 3/8.....	4.0	7/16 x 1/2 to 8.....	1.0
1/8 x 7/16 to 1/2.....	3.0	1/2 x 9/16 to 8.....	1.0
1/8 x 9/16 to 7.....	2.0	9/16 x 2 1/4 to 8.....	1.0
1/8 x 7 1/8 to 8.....	3.0	9/16 to 2 x 5/8 to 2.....	0.5
3/16 x 1/4.....	5.0	5/8 to 2 x 2 1/4 to 7.....	1.0
3/16 x 5/16.....	4.0	5/8 to 1 1/2 x 7 1/8 to 8.....	1.0
3/16 x 3/8.....	3.0	1 1/8 to 2 x 7 1/8 to 8.....	1.0
3/16 x 7/16 to 3/4.....	2.0	2 1/8 to 3 x 2 1/4 to 5.....	1.0
3/16 x 11/16 to 2.....	1.5	2 1/2 to 3 x 5/8 to 8.....	1.0
3/16 x 2 1/4 to 7.....	1.0	3 3/8 to 4 x 3 1/4 to 6.....	1.0
3/16 x 7 1/8 to 8.....	2.0	3 1/2 to 4 x 6 1/2 to 8.....	2.0
1/4 x 5/16 to 3/8.....	2.0	4 1/8 to 5 x 4 1/8 to 7.....	2.0
1/4 x 7/16 to 5/8.....	1.5	4 1/8 to 5 x 7 1/8 to 8.....	2.0
1/4 x 11/16 to 2.....	1.5	5 1/8 to 6 x 5 1/8 to 8.....	2.0
1/4 x 2 1/8 to 7.....	1.0	6 1/8 to 7 x 6 1/8 to 7.....	3.0
1/4 x 7 1/8 to 8.....	2.0	6 1/8 to 8 x 7 1/8 to 8.....	3.0

Intermediate sizes take the next higher extra.

Annealed steel, 1c. per lb. extra.

Cutting to Specified Single and Multiple Lengths

	Per Lb. Cents
24 in. or longer	½
18 to 24 in.	1
12 to 18 in.	1½
6 to 12 in.	2
Less than 6 in., special price; over 18 ft., special price	

The American Pneumatic Chuck Co., 9 South Clinton Street, Chicago, has been incorporated under the laws of Illinois for the manufacture of air chucks and air-operated devices. John Olson, formerly with the Detroit Pneumatic Chuck Co., will be in charge of design and manufacture. The company will specialize for the present in standard and special air-operated equipment, for the rapid production of shells and other munition parts. Later on it intends placing on the market a complete line of air chucks. The Neidow & Payson Co., Chicago, has been appointed selling agent.

Rulings as to Excess Profits Tax Law

Internal Revenue Bureau Attempts to Straighten Out Many Tangles, Making Numerous Concessions to Taxpayers—Questions as to Inventories

WASHINGTON, Jan. 7.—In a rather lame attempt to obviate the necessity for legislation to straighten out numerous tangles in the excess profits tax provisions of the war revenue act of Oct. 3, 1917, the Internal Revenue Bureau has promulgated a series of arbitrary rulings, the general tendency of which is to resolve doubts in favor of the taxpayer. Taking the rulings as a whole, however, they appear to be merely a series of minor concessions, doing very little to settle the really serious problems concerning capitalization, tangible assets, etc., which have been raised as a result of the ambiguous terms employed in this feature of the revenue act.

In response to many complaints received by the Bureau from corporations, partnerships and individuals alleging their inability to furnish the data which the law appears to require concerning invested capital and net income for the so-called pre-war period, including the calendar years 1911-12-13, the commissioner announces that, for the purpose of levying the excess profits tax, "a return of information with respect to the invested capital and net income for the pre-war period would not be required of a corporation, partnership or individual" in the following cases: (1) If the taxpayer accepts the minimum percentage, viz., 7 per cent, as the percentage to be used in computing the deduction under section 203; or (2) if the trade or business is taxable only at the 8 per cent rate under section 209.

The commissioner stipulates, however, that this concession "must not be construed as not requiring the return of information as to all facts which may be necessary for the ascertainment of the capital and income for the taxable year whenever such a return is required by the Commissioner of Internal Revenue."

Taxpayers will hardly find the above "concession" of much value inasmuch as it can only be availed of by corporations willing to accept a minimum deduction to represent earnings of the pre-war period or by individuals whose earnings are subject by law to an 8 per cent tax only because of the fact that they have no capital invested in their business.

What Is Tangible Property?

It appears that the Board of Excess Profits Advisers, whose function has been to counsel the commissioner with regard to the intent of Congress, have only scratched the surface of the important question as to what constitutes tangible and intangible property in capital account. In a ruling issued by the commissioner it is stated that "to date the following classes of property have been construed to be 'tangible property' within the meaning of section 207: Stocks, bonds, bills and accounts receivable, and notes and other evidences of indebtedness."

In the same ruling the commissioner says that the term "other tangible property" as used in section 207 will be construed to mean "property of a character similar to good will, trade marks, and the other specific kinds of property enumerated in the same clause." Quite in line with the general vagueness which characterizes the statute and some of the rulings made thereunder is an explanatory remark which the commissioner adds to this ruling, as follows:

"With respect to property not clearly of such a character, rulings will be issued as occasion may demand, to indicate whether it shall be regarded as tangible or intangible."

Many inquiries have reached the Internal Revenue Bureau respecting the basis upon which inventories of supplies, materials and work in process of production should be made up as factors in excess profits tax calculations. On this point the commissioner holds that

such inventories "must be taken either (a) at cost or (b) at cost or market price, whichever is lower; provided that the method adopted must be adhered to in subsequent years unless another be authorized by the Commissioner of Internal Revenue." It is added that "gain or loss resulting from the sale or disposition of assets inventoried as above must be computed as the difference between the inventory value and the price or value at which sold or disposed of."

Partners and Corporations

One of the features of the excess profits tax provision of the revenue act which has been most severely criticised is the apparent discrimination against partners and individuals, especially the latter, as compared with corporations. It has been pointed out that corporations may distribute a large part of their earnings in salaries to officers and thus escape the excess profits tax entirely, or cut such tax down to 8 per cent of the salaries so paid less the \$6,000 exemption in the case of each salary. Careful examination of the statute appears to justify these complaints and does not indicate any remedy short of further legislation. The commissioner, however, doubtless at the instance of the board of advisers, has issued a ruling under which salary allowances may be made in the case of partnerships and of individuals. This ruling provides:

1. In computing net income for purposes of the excess profits tax, a partnership will be allowed to deduct as an expense reasonable salaries or compensation paid to individual partners for personal services actually rendered during the taxable year, if the payments are made in accordance with prior agreements and are properly recorded on the books of the partnership. In no case shall the salaries or compensation so deducted be in excess of the salaries or compensation customarily paid for similar services under like responsibilities by corporations engaged in like or similar trades or businesses.

2. An individual carrying on a trade or business having an invested capital may designate a reasonable amount as salary or compensation for personal service actually rendered by him in the conduct of such trade or business. In no case shall the amount so designated be in excess of the salaries or compensation customarily paid for similar service under like responsibilities by corporations or partnerships engaged in like or similar trades or businesses.

It will be noted from this ruling that much latitude is allowed taxpayers in computing "reasonable" salaries and it remains to be seen how such a provision will work out in actual practice.

Gifts Are Allowed

In view of the fact that at this season of the year it is the practice of many corporations to distribute considerable sums among their employees as bonuses for efficient services or in celebration of unusual gains, another ruling of the commission will be examined with interest. In computing income tax returns under prior laws the bureau has refused to allow credits for contributions to charity, and in some cases bonuses to employees have been treated as "gifts" not deductible for the purpose of calculating net earnings. Commissioner Roper, however, now holds that such bonuses, if made in good faith and not for the purpose of evading taxation, may be treated as compensation and therefore not subject to tax. This ruling gives collectors of internal revenue wide discretion in its application, stipulating as it does that bonuses distributed in proportion to stock holdings must be regarded with suspicion, notwithstanding the obvious fact that in many cases the largest stockholders in small corporations commonly render the most valuable services.

W. L. C.

Crux of the War Situation Is Labor

Judge Gary Favors Bringing Men from
Distant Islands and the Orient to Help
Win—Discusses Post Bellum Conditions

JUDGE ELBERT H. GARY, chairman of the United States Steel Corporation, delivered an address before the Commercial Club of Chicago, Saturday, Jan. 5, on Business Problems During and After the War. He said that Germany is more virile, more efficient, more determined and more aggressive than she was at the beginning of the war, and that as a nation, if she wins in the near future, she will be stronger financially, industrially, commercially, militarily and with a comparatively small reduction in the number of men notwithstanding the loss of millions of soldiers.

"Our country as a whole, including the several branches of Government," said Judge Gary "does not yet appear to appreciate that in order to win in this war it is necessary to appropriate every ounce of energy, every dollar of wealth and every atom of skill within reach, to be drawn against when needed; and to offer every sacrifice, even of personal opinion or pride or desire for advancement of the interests of individuals or political parties. Of course every one has decided that every other person ought to subject personal ambition to the demands of the public welfare; but large numbers go no further. This includes you and me, and it does not exclude others occupying more conspicuous places in the nation's registry. But this is only one side of the canvas.

"If we are going to continue in the war against Germany, with all her power, we may well ask ourselves what is necessary for a defense against this modern monster of despotism, tyranny, destruction and oppression; and also, whether or not we are able to meet the requirements."

The Labor Question

After speaking of the essentials to victory, such as food, transportation, arms, barracks, aircraft and seacraft and also money to pay the cost of providing all these elements of strength, Judge Gary turned to a discussion of the labor situation, and said:

"Labor is scarce and growing more so, although there are employed large numbers of American women who are doing their full share, in both civil and military lines of activity, in accordance with their strength.

"Now it is manifest that in order to render the assistance that is asked of us and which seems to be imperative, we must have more and more men, for soldiers and workmen, skilled and unskilled. We cannot produce the quantities or amounts demanded unless the number of men is materially increased, nor unless all who are willing to work are permitted to do so to the extent of their reasonable capability and desire. There is a shortage of labor in this country at the present time on the farms, the railroads, the ships, in the shops, the factories, the mines, the offices. Production even up to the present capacity cannot be secured unless more workmen are employed. And for the building of increased productive capacity and for the operation of the same, additional men must be procured.

Slow in Getting Ready

"We may be excused for having been slow in getting ready for defense against unjust attack, even since August, 1914, but there can be no justification for failure in the future to push vigorously and without unnecessary interruption, in every department of the Government, preparation for assisting the allied forces to carry on and to win the war by the utilization of everything that is valuable for war purposes. Expenditures had better be too large and preparation overdone than to risk the danger of neglecting to provide any single item that might add to the military strength of the allied forces.

"The weakest spot in our situation is lack of suffi-

cient production of the things that are vital to the life and strength of the armies, which might be obtained except for the scarcity of labor. It would be unwise, nay unpardonable, if this shortage shall not promptly be overcome. This question at present is of commanding import.

"This country has an advantage over all others in times of war or peace, by reason of her natural resources and accumulated wealth but it is not of full practical value unless the agencies for production and use are sufficient. To the extent that workmen are lacking in number, to a corresponding degree are wealth and raw materials without value. It is questionable whether, when an abundance of ships are built, there will be trained men and machinery in ample numbers and quantities, and, in the case of battleships, adequate supplies and munitions.

Frank Discussion Needed

"The labor question is one which employers are sometimes reluctant to discuss for fear of misinterpretation of motives, but in war times every question which bears vitally upon the conduct and termination of the war should be considered frankly and fairly by the employer, the employee and the public generally. Each is equally interested. Each is entitled to protection and the rights of none should be neglected, although the necessities of the general public are always of primary importance.

"Lest anyone might conclude that I have in any respect changed my views as heretofore expressed concerning labor generally, I may be permitted to say: Workmen should always have fair, just and liberal treatment. They should be paid good wages, taking into account the service rendered and all conditions which reasonably apply. The welfare, safety and health of the men and their families should receive careful attention by employers. Relief funds for the result of accidents or old age should be established. All men, of all grades, ranks and nationalities, should be permitted to work when and where they please and on terms that they agree to. The laws should impartially protect both capital and labor and permit imposition or abuse by neither.

Duty to Win War

"The precarious conditions, already adverted to, compel the United States to do everything within its power to bring the war to a speedy and victorious close. We insist our soldiers shall not be placed in the trenches or on the firing line unless and until they are completely hardened, trained and equipped, and that they shall always be furnished with sufficient supplies to protect them and preserve their health. The fathers and mothers of this country have given their sons in defense of our beloved land. These men are entitled to every practicable effort on our part to assist them, and and this without one moment of unnecessary delay. Efficiency, abundance and promptness will save millions of men and billions of money.

"To the extent needed for the purposes named, the United States should immediately, under proper conditions and reasonable restrictions, draw from the islands of the sea and from oriental countries, enough men including soldiers and sailors to meet every emergency. There would be no difficulty in obtaining within a short period large numbers of strong, healthy, intelligent, loyal men for civil or even military duty, and the number could be increased from time to time as required. All who are acquainted with the facts know that we need more men and that we can get them if we are so disposed. If legislation is requisite, Congress should act without delay.

"There may be, there already have been, objections to the admission of certain nationalities, even temporarily and under carefully considered restrictions. These have been persistent, especially by foreigners who heretofore have settled in this country. But the thing to do first is to win the war; to stop the spilling of blood, the destruction of the lives and health of our noble and loyal men and the unjustified depletion of our resources. We can discuss and properly decide other questions later. If we now delay, we may not have the opportunity to consider the other matters.

Possible Objections

"And still, if objections are raised and discussed, they can be fairly met and with good reasons, in addition to the one war's necessity, which is undebatable. At any rate they are not fundamental nor of much consequence by comparison."

Judge Gary next spoke of the importance of the question of administration in order to obtain conservation and proper application of all our resources with discrimination and wisdom. He added:

"We believe the war will end victoriously for the allied forces within two or three years; we hope in a much shorter time. It could not terminate in favor of the other side within a decade, for, with all the means at our command we would fight for that period or longer before we would submit to the despotic rule of an autocratic tyrant.

"So sure are we that we will be perfectly organized, that the management will be of the highest order and that the war will be brought to a successful conclusion, we are justified in considering with care and anxiety the world's business affairs growing out of and following the war."

Germany in the Future

Judge Gary said that whatever the result of the war may be, Germany will be ready to engage in a vigorous contest for overseas trade, even extending into the United States, and other countries including our friends, the Allies, such as England and Japan, are preparing to carry on business in a vigorous manner after the war. "We shall," he said, "be met with the fullest preparation and the fiercest competition on the part of others and we must likewise be in condition to protect our interests and to push our claims for a fair share of the world's business. There will be an opportunity for economic progress, which, if neglected, may never return."

In conclusion Judge Gary said:

Future Trade Problems

"Legislators, as well as business men, should, even now, give heed to future trade problems, for of great importance is legislation which will place our country on a parity with all others in the protection of our domestic trade and the extension of our foreign commerce. Other governments will, by legislation, aid, in every proper way, their business interests to expand and prosper—many have already arranged for this; and our Government should do likewise. An intelligent person seeks opportunity to profit by the experience of others.

"Neither Germany nor any other country, whose home industries are fully protected, will hereafter be permitted to enter the markets of Great Britain, except on a basis of equal or reciprocal protection, depending upon all the circumstances, including the products involved. There will be careful study and scientific discrimination, all with the single intention and effort to secure every proper advantage. The theories of the past, based on habit of thought, and conditions which have disappeared, will be swept aside and principles more practical, more selfish and more useful will be substituted. England for the English will be the national slogan, as it ought to be.

Reasonable Protection

"From the same motives and for the same reasons, American industry must be protected, not unfairly, not to the prejudice of the general public nor to the point

of permitting abuse or oppression of any interest, but to the limits of reason and honesty, all things being considered. Laws which will secure just prices to the consumers, reasonable profits to the producers and to the transportation companies, and fair wages to the workmen, all based on inquiry and study, should be the aim.

"To compete with other countries we must have a merchant marine equal in every particular to the best, with every advantage and no disadvantage in comparison with any other, unhampered by laws, rules or regulations which might interfere with practical and successful business operation. We should be prepared to deliver the surplus of everything we produce at the doors of non-producing countries in packages and on terms satisfactory to those who desire to purchase.

"Our merchant ships must never again be compelled to haul down the American flag or to occupy an inferior position in the international struggle for economic excellence and advancement. Americans, if given an equal chance with the people of other nations, will furnish business to comfortably support a merchant marine excelled by none.

"If there be established, maintained and effectively executed a basis for equitably disposing of all international disputes by arbitration, a very large navy for the enforcement of legitimate civil rights will not be necessary; but in any event, the United States should maintain a navy of sufficient strength to protect her commerce in every part of the world. Heretofore it has not always been absolutely independent and safe, notwithstanding what may have been said or written to the contrary.

A Constructive Policy

"Of high importance is the maintenance of a constructive policy by our Government, one that is calculated to build up, to extend, to increase efficiency. It has been demonstrated that concentrated wealth, integration of industry, large units, big and capable organizations are not only valuable but indispensable in times like the present; and they are proportionately so at all times. When large quantities, highest quality and efficient and prompt execution are requisite, the demand for supplies can be properly met only by large resources and capacity. Small unintegrated or disintegrated or impoverished productive agencies are not adequate.

"The railroads in certain sections of the country are a striking example of the imperative need for additional tracks, equipment and terminal facilities which money alone can provide, and this in spite of the immense sums which have been expended for these purposes. It is a pity that they have not been pecuniarily able to make full preparation to meet the emergencies of the present time, for there is a marked deficiency in railroad capacity. They need a good deal of additional money, and they should be allowed tariffs large enough to furnish it.

"And all this applies with equal force to a post-war period. To occupy a proper place in the world's economic forum, our country, by a wise policy, should permit, and even encourage, the building up and maintenance of wealth and of production and transportation capacity proportionate to the great and increasing resources of the country as compared to other countries. Abundant manufacturing and transportation facilities on land and sea and lakes, supported on a living basis, ably and properly managed by private interests, are what a prosperous country should have.

Destructive Policies of Past

"During the last decade or longer, in varying degrees, the policy of the United States has not been favorable to conditions which, at present, are deemed wise, proper and necessary.

"The policy of Germany and, in less degree, of other nations, has been to construct, to build up, to extend, to enlarge, to foster enterprise and to protect industry; while our policy has been, in a measure at least, to disorganize, to disintegrate, to prevent, to limit and even to destroy. For this reason Germany to-day has a

military organization and a business organization ahead of all others, and this has prolonged and will further prolong the war, notwithstanding the superiority of her enemies in wealth, numbers and other resources. We should be placed on an equality. It is not intended to convey the idea that unbridled license to concentrated business is advocated; quite the contrary. In these matters, as in all others, there should be authority for governmental investigation, supervision and control, non-partisan and subject to judicial interference and correction for proper cause. Abuse and oppression by the public or the individual should always be preventable by law.

"All expenditures that are being made at the present time under government direction, so far as possible without interfering with or minimizing their value for military purposes, should be made in view of and in accordance with the requirements of business enterprise after the war. In the adoption of designs, in the method of construction, in quality and quantity, those in charge can often, without detriment, change and improve suggested plans for the benefit of service in times of peace. This question, at least, should be in the minds of the builders and the purchasers when contracts are concluded.

Loyalty to Country

"Speaking to and for that part of the business fraternity comprised of capitalists and employers of labor and their representatives, I urge that during and after the war, by our attitude and conduct, we demonstrate a spirit of loyalty to country, of adherence to the principles of justice and honesty; that we exhibit an intention to observe the requirements of law, to recognize the rights of competitors, customers and the general public and that we treat our employees considerately, fairly and liberally. Our practices must be in accordance with the highest ethical standards. Thus, up to the measure of our deserts, will we be entitled to the confidence and to the co-operation of those in authority.

"I believe all things requisite will be demanded by the people of the United States for its and their protection and advancement, during and after the war, and that the demand will be crystallized into a governmental policy; that it is generally realized we have reached a crisis in our history; that disaster threatens; that it may be averted if we do not hesitate or quibble over non-essentials; that America for Americans will also be our national watchword; that laws will be passed, or repealed, whenever necessary to aid in securing peace and to give every interest, big or little, and every individual, full opportunity to live, to progress and to prosper.

The Silver Lining

"Therefore, I am an optimist, even in these times. There is, as always, a silver lining to the clouds which now obscure our vision. We need not despair. We have reason to be hopeful. There is sunlight beyond. Right will prevail over might; and reason will overcome madness. We shall be victors in the mortal combat that rages, and afterwards our country will make longer and faster strides in the struggle to maintain a deserved and satisfactory position in the ranks of nations. The business men of the United States, in the management of their affairs, have reached a high level of efficiency and moral excellence. They are at present of incalculable assistance to the Government and they may be depended upon to do their part in restoring the world's equilibrium after peace shall be proclaimed. We are proud of our country. Let us continue to give our country reason to be proud of us."

To help relieve terminal and warehouse congestion and move the short-haul loads which the railroads no longer are able to take care of, the Packard Motor Car Co. has established trucking exchanges at its branches in several of the larger cities. It has listed owners of trucks available for immediate service, and has offered to put in touch with these owners all who have local or long-distance freight to move.

HARDWARE ON WAR BASIS

Industry to Mobilize Its Resources and Control Prices to Aid Government

The American Hardware Manufacturers' Association will hold a special war convention at the Hotel Biltmore, New York, Thursday, Jan. 17, for the purpose of adopting a definite plan of organization to give the Government the service which is required for industrial co-operation in the war program.

Charles W. Asbury, Enterprise Mfg. Co., Philadelphia, president of the association, in a letter to members says:

"It is proposed that the association shall render effective aid primarily to the Government and secondarily to its members, not only in respect to securing sufficient productive capacity at reasonable prices, but also in matters affecting priorities of supplies or of shipments of finished products and the determination of what industries in hardware are essential under war conditions."

The War Service Committee of the association has prepared a tentative diagram showing in detail the plan of such an organization as in its judgment will best meet the exigency of war.

The diagram places the president of the association as the head of the organization, with the War Service Committee acting under his direction, and under this committee the main office staff in New York and the executive manager of the association, whose office is in Washington. Then there are nine sections, from A to I, inclusive. Each section is headed by a price-control board and a section committee.

Section A comprises wire and heavy hardware; section B, builders' hardware and castings; section C, sheet metal work; section D, tools for woodworking; section E, tools for metal-working and cutlery; section F, agricultural tools; section G, automobile and sporting goods; section H, general supplies and section I, miscellaneous.

Each line of manufacture, as above indicated, will constitute a division. The manufacturers in each division will organize as they desire and elect a delegate to the section committee. Delegates individually or through their division committee will submit prices to the price-control board; distribute orders among divisions which the Government is not able to place satisfactorily with individuals, and file with the executive manager catalogs, reports of current capacity, time required to start delivery and maximum weekly or monthly deliveries in each major group of items in the division.

The executive manager will consolidate the requirements of the Government, obtain priority for hardware products or seek to prevent discrimination against them as non-essentials and advise the War Service Committee of developments or changes in Government policy affecting the hardware industry.

The price control boards of each division will pass upon questions affecting prices.

Production of Metals in Canada

The Department of Mines, Ottawa, Ont., estimates the production of metals from Canadian ores for the year 1917 as follows: Copper, 113,000,000 lb.; nickel, 84,800,000 lb.; lead, 56,700,000 lb.; zinc, 31,000,000 lb.; gold, 17,000,000 ounces; silver, 23,500,000 ounces. The production of pig iron was about 1,186,000 short tons, and steel ingots and direct steel castings, 1,735,000 short tons; coal, 14,100,000 short tons. The production of gold, silver, copper and coal was less than in 1916, while the production of nickel, lead, zinc, pig iron and steel was greater than in the former year.

The Babcock & Wilcox Co., Bayonne, N. J., manufacturer of water tube boilers, gave a bonus to its 2700 employees at Christmas of 10 per cent of their wages for the past six months.

British Iron and Steel Trades in 1917

Strictest Government Control Has Prevailed
Throughout an Extremely Busy Year—
Business Men Patient and Long Suffering

BY L. H. QUIN*

THE iron and steel trades of this country have never been busier than during 1917, and, certainly, they have never been so featureless from a market point of view. Throughout the whole of the year these important trades, so vital to the nation in time of war, have been under the strictest Government control. The free market has all but disappeared, and makers and merchants, buyers and sellers, have all alike had to seek official authority for almost every transaction. Recognizing the supreme claims of the nation upon the energy and the resources of all its citizens, those engaged in the pig iron and the manufactured iron and steel trades have striven loyally to meet every Government requirement, and have sought by every means in their power to facilitate the manufacture and distribution of the goods so essential for the victory of our arms. It is much to be regretted that their efforts have been greatly handicapped on many occasions by a perverse officialdom whose methods have frequently caused the utmost dismay to commercial men accustomed to put through their work with business-like dispatch. Amid the strangling circumlocutions of redtape traditions it has often been found singularly difficult to get important matters discussed and settled, or legitimate grievances remedied without long and vexatious delays. That things have gone as well as they have has been due largely to the patience, the long-suffering and the loyal good-will of the business community. Still more to be regretted is the effort which has been put forward and encouraged, directly and covertly, in official quarters to discredit the merchant, and to endeavor to eliminate him from the honorable position in British commerce and industry which he has so long occupied to the advantage of trade and of the whole community. These machinations have aroused the merchant class throughout the country, and it is much to be hoped from the influential associations which have been formed in all the great centers, and from the powerful backing which they are receiving that the efforts of irresponsible officials to revolutionize the trade methods of this country will not be allowed to prevail.

The Pig Iron Trade

In the pig iron trade, as already intimated, business has been more or less stereotyped, but the large and increasing home demand has been adequately met under the system of monthly allocations made by the control committee. The output of ironstone from Cleveland has been increased by some half-million tons over last year's total—about 4,900,000 tons as against 4,315,700 tons last year—and the production of pig iron in the North of England will show an increase of possibly a quarter of a million tons—from 3,100,000 tons to 3,350,000 tons. Although great efforts have been made to increase the output of pig iron, the scarcity of labor and material has constituted a continuous obstacle to progress, so that while the average number of furnaces in blast in the North of England last year was 72, it has only been increased over the past 12 months to an average of about 76. Moreover, the furnaces have been driven so hard over so long a period that it is doubtful whether they can now produce as large an output per week as in pre-war times. Preparations for increasing the number of furnaces were still in progress at the end of the year, and the number will no doubt be substantially increased during 1918.

A feature of the iron trade during 1917 has been the increased manufacture from native ores of basic iron for steel-making purposes. This has been rendered necessary owing to the diminished importation of hema-

tite ores in consequence of the shortage of tonnage and the submarine menace. Toward the end of the year this began to have some effect upon the output of Cleveland foundry iron, which had hitherto been plentiful, and in the absence of additional furnaces on foundry pig, the conditions in 1918 will probably be less easy.

Exports Restricted

While the home trade has been steady, and supplies adequate, exports have been severely restricted, all shipments to neutrals being prohibited. As the year went on the exports became more and more limited to France and Italy, and the quantities sent to the Dominions all but inconsiderable. The great bulk of the shipments has gone to France. The total exports of pig iron for Middlesbrough for the year are not likely to exceed about 530,000 tons, or about 100,000 tons less than in 1916.

There have only been two alterations during the year in the maximum prices for Cleveland pig iron which were fixed in July, 1916. In April there was an advance of 5s. per ton, bringing the price of the standard No. 3 quality for home consumption to 92s. 6d. and the export price to 102s. 6d. These prices were maintained until late in the year. The advance in the home price was made in response to representations made by the ironmasters as to the increased cost of production, and had apparently nothing to do with the advance in fuel prices which was made the subject of a direct settlement, apart from the market price, between the Government and the makers. The export price, however, covers both the normal increase in costs and the fuel increase. In view of the 5s. advance in furnace coke and the increased cost of limestone and ironstone, the advance, though large, is not excessive. The highest price ever paid for Cleveland No. 3 was 130s. in 1873. This was paid in the open market during the boom following the Franco-German War.

At the beginning of December the home maximum price of Cleveland No. 3 was raised by 2s. 6d. per ton, bringing it up to 95s., and the export price to 14s., making it 116s. 6d. The former was intended to cover the increase in the cost of production during the past 12 months, leaving the extra cost due to the official advance in fuel prices to be arranged directly between the Government and the makers. The rise in the export price, apart from the 2s. 6d. advance, covers the additional cost due to the advance in coal and coke, ironstone and limestone. Both advances were made retrospective to Sept. 17, thus throwing upon sellers the very difficult task of recovering money on transactions, many of which must long since have been completed. Including these advances, the average home price for the year works out at 91s. 11½d. per ton, and the average export price at 105s. 4d. The average realized selling price, as ascertained by the accountants for the purpose of fixing blast furnace men's wages will work out at about 94s. 11.81d., as compared with 82s. 10.18d. last year, an increase of 12s. 1.63d. over last year.

Steelmaking Iron

In the hematite trade conditions of continuous stringency, even greater than those of last year, have prevailed. For while the output has been increased it has failed to keep pace with the enormous growth of the demand. In addition to the immense requirements of the war, the national shipbuilding program has been expanded enormously, thus proportionately increasing the demand for steel. Hence throughout the year makers have barely been able to cope with their commitments, and only by the strictest organization of

*London correspondent of THE IRON AGE.

distribution has it been possible to keep consumers supplied with their minimum requirements. The intensity of the home demand has necessarily affected the amount of iron available for export. This has been severely restricted, and subject to prolonged delays. Nevertheless, pretty continuous deliveries have gone forward to France, and practically all the remainder obtainable for shipment has gone to Italy. The home price of East Coast mixed numbers has remained throughout the year at 122s. 6d., and the extra cost to the makers consequent upon the advance in the price of fuel which was sanctioned in the earlier part of the year is being made good by the Government, there being no addition to the official market rate. The Government, however, sanctioned an advance of 6s. 6d. in the export price to the Allies, bringing the figure, which had since August stood at 141s., to 147s. 6d. This is retrospective to Sept. 17, when coal was advanced. Prior to August the export price had been 137s. 6d. to France and 142s. 6d. to Italy. The new price does not include the additional cost of neutral ore freights above the official parity, which will have to be added when officially ascertained and determined. As far as present figures will permit of calculation the average quoted price for export of East Coast mixed numbers will work out at about 142s. 3½d. against 140s. in 1916.

Finished Iron and Steel

In the manufactured iron and steel trades practically the whole capacity of the works has been absorbed, directly and indirectly by war contracts, and the amount of commercial work which it has been found possible to negotiate has been quite negligible. As the year went on and the gravity and urgency of the shipping problem became more and more apparent, the authorities took drastic steps to organize and expedite the output of shipbuilding material. As a result, in the closing months of the year fully 90 per cent of the capacity of the rolling mills in the North of England had been taken up for this purpose, and the output consequently expanded in a very substantial degree. Throughout the year there has been no alteration in the official maximum prices, but toward the close negotiations for readjustments were proceeding between the ministry and the manufacturers. Exports during the year have been limited in an increasing degree to France and Italy.

New Construction

Great progress has been made during the year with the putting down of new plants, and the extensions of old ones in order to meet the huge demands of the war. At Middlesbrough Dorman Long & Co., are constructing an entirely new steel plant at a cost of fully £2,000,000 sterling, and a portion of the plant is already in operation. Great extensions are also in progress by Messrs. Bolckow, Vaughan & Co., Ltd., the Skinninggrove Iron & Steel Co., the Cargo Fleet Iron & Steel Co. and the South Durham Iron & Steel Co. at Stockton. The purchase by Dorman Long & Co. of the undertaking of Sir B. Samuelson & Co. places the whole of the latter firm's output of pig iron, both Cleveland and hematite, at their disposal for steel manufacture. Numerous other firms up and down the country are carrying out great extensions, though particulars are not obtainable. It is estimated that the total output of pig iron this year will be upward of 10,500,000 tons, an increase over last year of about one million and a quarter tons. The total in 1918 will probably be in the neighborhood of 12,000,000 tons.

The position as regards foreign ore during the year has been very difficult owing to the lack of tonnage, and in the earlier months occasioned considerable anxiety. Later, however, deliveries improved, and, under a careful system of distribution the work was kept going. Business all along has been of an extremely hand-to-mouth character, at prices regulated and varied by the authorities.

Coke has been fairly plentiful throughout the year. In November, in consequence of the advance in coal, the maximum price of foundry coke was advanced by 7s. 6d. per ton, and of furnace qualities by 5s. a ton, bringing the price of the latter delivered at the works to about 35s. 6d.

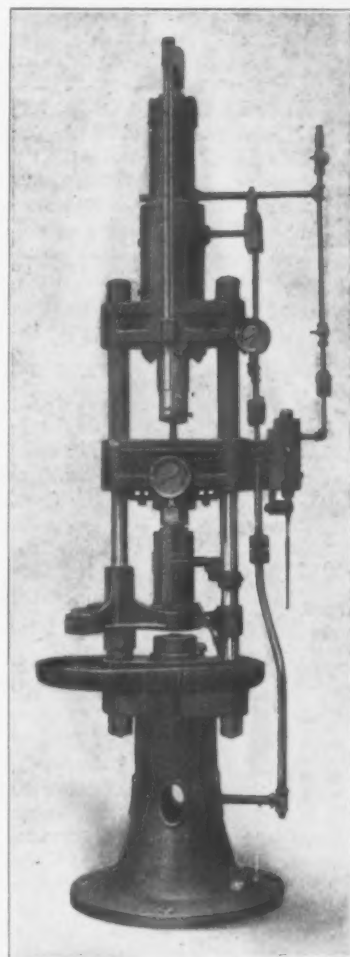
Hydrostatic Press for Testing Shells

A line of hydrostatic presses for testing common steel shells ranging from 3 to 9.5 in. in diameter has been developed by the Southwark Foundry & Machine Co., Philadelphia. Two basic designs have been brought out and such modifications as have been found necessary to provide a machine for giving the test pressure required by each particular type and size of shell made. It is pointed out that the same principle in general applies to all sizes and the test pressure is developed only in the body of the shell. All other parts of the machine, including the operating valves, piping and cylinders, are never subjected to a higher pressure than the nominal one of 1500 lb. per sq. in. From this line pressure a pressure in the shell body equivalent to within 5 per cent of the elastic limit is developed.

The press is entirely hydraulic in operation and is of the two or three column type. A revolving table is provided so that when one shell is being subjected to the test pressure, the second one has been revolved into a convenient position for inspection, while the third shell is being prefilled with water. The entire action is controlled from a single-lever operating valve, the first movement of which admits the line pressure of 1500 lb. to the lower cylinder. As this cylinder moves upward it engages the slotted base plug in the revolving table and forces the open end of the shell nose into a sealing gland.

When the full pressure has been reached in the lower cylinder the line pressure is automatically admitted to the top cylinder, which is arranged with an intensifier ram. This projects through a suitably packed gland in the stationary cross-member into the open nose of the shell. As this shell has been previously prefilled with water, it acts as the high-pressure intensifier cylinder and raises the pressure instantaneously to the predetermined amount. A gage communicating with the chamber intervening between the circular shell nose and the intensifier ram provides for a direct reading of the pressure which in the case of the 3-in. shell press shown is 18,000 lb.

The Dry Milling Engineering Co., 202 Boston Building, Denver, Col., has been organized to handle equipment for dry milling, dust collecting, drying materials, and powdered coal installations. William B. Senseman, for eight years with the Raymond Brothers Impact Pulverizer Co., Chicago, is president. The new company will represent the latter concern in the west, also the Buckeye Dryer Co., London, Ohio, the Dust Recovering & Conveying Co., Cleveland, and the Quigley Furnace Specialties Co., New York.



Steel Shells Are Subjected to a Maximum Hydrostatic Pressure of 18,000 Lb. in a Recently Developed Testing Press having an Hourly Capacity of 120 Shells

Unionizing Industry as a War Measure

Dangers of Such a Policy Are Cogently
Pointed Out—Why the Union Minority
Opposes the Status Quo During the War

—BY WALTER DREW*

IS the unionization of American industry necessary or desirable as a solution of our war-time labor problem? Government co-operation to this end has been urged in some very respectable quarters. The suggestion, wherever made, relies almost invariably upon British experience for its support. The chief danger of the suggestion lies in its plausibility. If labor on the one side, and the employers upon the other, are completely organized, it seems a simple matter for the Government, through control of these two bodies, to regulate and control industrial conditions generally. May I submit some considerations bearing upon this question?

Unions Oppose Arbitration

The primary essential of such a plan is Government control over the two parties—capital and labor. The successful operation of the English labor measures was secured by the enactment of laws providing for compulsory arbitration of labor disputes and making it a penal offense to put into operation a strike or a lockout. In this country our constitutional limitations prevent the enactment of compulsory arbitration laws as affecting private industry. Such laws, as applied to the railroads and other public utility service, would undoubtedly be legal, but have been so bitterly opposed by organized labor that they have failed of passage.

Even the suggestion of the President that railroad strikes should be held in abeyance to furnish time for investigation and publicity was successfully resisted. When the matter was pending in Congress, Mr. Gompers said: "Workers cannot delegate to outside authority, even though that authority be the Government, the right to regulate industrial relations without creating an opportunity for a continuous infringement upon their rights and freedom." (*Federationist*, January, 1917, p. 46.) Again he said: "Compulsory arbitration, compulsory investigation, and limitations upon the right to strike are part of the general policies of employers to exploit workers and to increase profits. Free workers will never submit to them." Also: "The enactment of such laws, even for war necessity, is for the purpose of destroying the economic power of the workers." (*Federationist*, March, 1917, p. 202.) This is also the attitude of the railroad brotherhoods. General unionization of industry in this country, therefore, would not be accompanied by the essential conditions obtaining in England—compulsory arbitration and government control of both parties.

Union Promises Do Not Hold

If the good faith of organized labor is relied upon to secure practical results, we enter very uncertain ground. We may at once concede the patriotism and good faith of many, and perhaps the majority, of national labor leaders. On the other hand, the speech and conduct of many others is of entirely different character. While the President of the American Federation of Labor is promising patriotic co-operation—sincerely, as I believe—the vice-president of the same organization, and head of the machinists' department, one of the most important trades in war work, is advising a national labor convention in such terms as this:

It is not a mere question of being behind President Wilson. That is a sort of catch expression, a catch phrase, sounds nice. The question is, Are you behind yourself? . . . Now, I hope the boilermakers in convention here will get in their minds that beautiful thought of "more."

*Counsel for the National Erectors' Association, New York.

Place your officers in a position to go out and demand, and then back them up.

An international officer of the Carpenters' Union, after calling a strike of his union in order to compel the discharge of members of another union from certain cantonment work, in the course of a jurisdictional quarrel, publicly threatened that his union would tie up all the cantonment work of the Government in the United States unless its claim of jurisdiction over that class of work should be allowed.

Leaders Cannot Control Men

Mr. Gompers, before the Industrial Relations Commission, and at other times, has stated that the American Federation of Labor has no control over its allied unions. Neither can the international unions control their various locals over the country. Many of the local strikes on war work have been put into effect and maintained in direct opposition to the advice and orders of the international officers. Therefore, the many strikes over the country by local or national unions, in direct violation of the agreement entered into between Mr. Gompers, in behalf of organized labor, and the War Department, the Navy Department, and the Shipping Board, do not necessarily convict Mr. Gompers of bad faith. They simply demonstrate the lack of any central cohesive and controlling authority on the part of organized labor which can add to its pledge and promise the guarantee of performance. This discrepancy between pledge and performance has provoked so much hostile comment that Ralph Easley of the Civic Federation takes pains, in a public article, to set Mr. Gompers right before the public. He says:

The general public does not appreciate the fact that Samuel Gompers, as president of the American Federation of Labor, has not a vestige of authority to call a strike on or off, because it is made up of representatives from the 115 international craft organizations. . . . Each has its own constitution and by-laws, and each would resent any interference by the American Federation of Labor or Mr. Gompers in any of its own internal affairs—and a strike is a purely internal matter.

Where, then, is the compensating feature for extending the closed shop in our industries at this time? Added power would be given to the radical, the mercenary and the unpatriotic elements of labor, with no corresponding added control or responsibility. Is not our experience since the beginning of the war with industries that were already unionized an earnest of what might be expected? The long and devastating strikes in the shipyards of the Pacific coast were in strongly unionized industries, and were carried on against the strong personal advice and exhortations of Secretary of Labor Wilson and other national labor leaders. One of the most serious of all was more of a boycott than a strike. It consisted in the refusal of the unions to handle certain objectionable materials. Even now the question is being seriously agitated with the approval of the same national labor leader who believes that backing up the President is fine in theory, but not in practice, to renew these coast strikes in spite of the adjustments secured by the President's commission. Postmaster-General Burleson, in his recent report, states that the unionizing of the postal employees is rapidly becoming a menace to the government service and to the public welfare.

England Now Open Shop

Upon the great open-shop industries of the country rests the real burden of war preparation. They are going about their task without blare of trumpets or

parade of patriotic purpose. They are organized upon the basis of co-operation and efficiency. The one thing that England secured by its wartime measures was a government control of the labor situation, which is not possible in this country. On the practical side, however, in the doing of the actual work needed to be done the Government in England found it necessary to reject union control of industry and to adopt the principles of the open shop, and millions of non-union men and women formerly excluded from industry by union rules are now working side by side with union men in English shops and factories.

In this country, under our Constitution, the Government cannot lawfully discriminate between union and non-union establishments or workers. The suggestion that the extension of unionism has the support of the Government can only result, therefore, in the raising of false hopes and the increase of industrial unrest. Many strikes have already been called in the hope that Government pressure would be forthcoming to compel the employer to grant the closed shop. The Secretary of War and other responsible Government officials have unequivocally stated that they could not and did not require closed-shop operation on war work. In the Coal Case decision, very recently handed down by the Supreme Court, and which bids fair to take its rank with the Danbury Hatters' Case as a historic labor case, the Supreme Court reaffirms the right of the employer to operate his business in accordance with such labor policy as he may elect, and carries this doctrine to the point of asserting the employer's right to employ workers upon the express understanding that they shall not belong to any union, and it holds interference on the part of the union with such employees in the effort to unionize them to be unlawful.

Ninety Per Cent of War Work in Open Shops

Official reports to the Secretary of War show that 90 per cent of our industries available for war work are open shop. Some of our national open-shop industries, however, were once upon a closed-shop basis, but were compelled to change to the open shop in the interests of better organization, greater efficiency and fuller co-operation between employer and employee. Their employees do not desire to return to the old conditions. Since a vigorous organizing campaign for the unions is being constantly conducted, it must follow that the millions of non-union workmen in this country have remained out of the unions as a matter of choice or principle. There are many who insist that a large percentage of the workers now in the unions are not there from choice. In any event, it must be clear that the unionizing of American industry is not a mere matter of waving a wand. Whether sought through voluntary action, or by means of compulsion or pressure, the attempt would most certainly bring a condition of practical chaos as its first result.

Conciliation Refused by Workers

The most important and successful feature of the British measures is a plan for the enrollment of munition volunteers into a sort of industrial army under direct control of the Government. These volunteers can be sent to any shop or factory where their labor is required. This plan is entirely feasible in this country. The Industrial Conference Board, whose members employ 15,000,000 of workers, submitted to the Government in September a proposal for the creation of a Federal Board, consisting of representatives of the employers, the employees and the Government, for the adjustment of labor disputes during the war. Strikes and lockouts were to be voluntarily relinquished. Readjustment of wages and hours to meet increased cost of living or changed conditions was provided for. The board pledged its members to the acceptance of such a program and asked that an early conference of organized labor be called in order to obtain their co-operation and pledge in carrying out the plan. This plan is the one in operation in England in its essentials, except that it must necessarily rest upon voluntary action rather than upon compulsion. This voluntary action the unions refused and have officially refused to join in the suggestion of the conference board. Their

one and only suggestion of co-operation is in substance that "the tail shall wag the dog," or in other words that the small percentage of unionized labor in this country shall be given full and complete control of industry.

Why not proceed with the munition volunteers plan? Why not adopt the essentials of the English plan for adjustment of disputes, readjustment of wages, etc.? With a definite policy of this character put into operation by the Government, I believe that public opinion and the loyal co-operation of the rank and file of labor—both union and non-union—would insure successful results, even though the element of actual compulsion were lacking.

Safety First Inclosed Lever Switch

An improved form of inclosed lever switch has been developed by the General Electric Co., Schenectady, N. Y. It is designed particularly for the control of the driving of machine tools or for lighting and power circuits, and, like the others of this type, arrangements are made to prevent accidental contact with the current-carrying parts when they are alive.

The switch consists of an externally operated standard lever switch inclosed in an iron case, arranged so that the current-carrying parts are inaccessible when alive. This feature is secured by a simple interlock arranged so that the cover to the fuse compartment cannot be opened while the switch is closed, nor can the switch be closed while the fuse compartment is open. The screws employed to hold the main cover in place are inside of the fuse compartment so that when the compartment is closed up they cannot, of course, be removed.



The handle of the standard lever switch is replaced by a hook-shaped casting which engages with a curved shaft operated by the externally mounted handle. The open and closed positions of the switch are indicated by raised letters on the box. If desired the switch can be locked in the off position by from one to three individual padlocks, and it is also possible to lock the fuse cover to prevent access to the compartment being gained by unauthorized persons.

The switch can be provided for mounting either singly or in groups. In the latter case a bus compartment is provided for inclosing all of the incoming wires. A safety catch can also be supplied if it is thought best to guard against accidental closing. In switches equipped in this way it is necessary for the operator to hold the catch in the released position with one hand and close the switch handle with the other.

The Allis-Chalmers Mfg. Co., Milwaukee, has announced that the bonus plan adopted at the beginning of 1917, which provides for the quarterly payment of 10 per cent of annual salaries or wages, will be continued in force during 1918. At the end of each quarter during the past year, every employee received an extra payment of 10 per cent on individual earnings during the period. More than 8000 individuals participated in the disbursement, which amounted to about \$750,000.

Prospect of Trade Relations with Russia

What Promise There Is When a Government
Is Finally Crystallized—Socialistic Tendencies
Regarded as Obstacles to American Promotions

—BY CAPT. DAVID LEAVITT HOUGH *

THIS is to be the third story on Russia written for *THE IRON AGE*, and its composition is being approached with considerable temerity. For what can one say?

One returning visitor to Russia has remarked that no one could tell what might happen in Russia. While there may be justification in this feeling, I would not want to give that impression myself, because those who know Russia must realize how much that great country is like its emblem, the Great Bear, and clumsily as it may do it, in the end it usually falls on its troubles, smothers them out, and with its wonderful powers of recuperation proceeds on toward its destiny. It was like this when in the active fighting, without munitions, honeycombed with corruption, and with not more than half-hearted support in high places, it still not only won battles but made its defeats so costly that they were equivalent to victories when contemplating the Allies' cause as a whole. It has also been remarked that the best way to help Russia was to let it alone, and there is more than half truth in this recommendation because the "disease" that has laid hold of the country must run its course and wear itself out in order that the people who have been so misled by the Provocators developed among their own people, and the false prophets sent into them from Germany may come to realize the impossibility of the doctrines that they have preached.

On the other hand, personally I feel that the hope of Russia lies in the Cossacks, and were it possible, in the eternal fitness of things in diplomatic relations, for the Allies frankly and materially to support and reinforce the Cossack leaders with materials, men and expert advice, it would seem that this would be the quickest and most rational way to reorganize the country and co-ordinate it with the Allies; for the wonderful *Zemstvo* organizations and the co-operative societies, while at present in the condition of a barrel with the hoops off, will fall back into place, when the situation clears, like a regiment called to attention from broken ranks by the sound of the bugle.

One of the great barriers imagined to be in the way of trying to help Russia is the natural and characteristic sensitiveness of the people—their disinclination to have others seem to interfere, or even seem to think that they need the help. But it would seem that an element like the Cossacks would more readily accept intervention in economic matters than any other element, while they, the Cossacks, are the element to force system and reorganizing influences, for they "have the punch."

The story written in 1915 (*THE IRON AGE*, March 25, 1915) pretty well gave the situation as it existed then, and made suggestions as to how America might best co-operate and establish trade relations. The story of February, 1917 (*THE IRON AGE*, Feb. 15, 1917), gave the conditions as they existed just before the revolution. Naturally conditions outlined in both stories no longer exist. How to approach the situation now it is difficult to suggest, but as a story written for *THE IRON AGE*

should logically confine itself to trade relations rather than to diplomatic or military affairs, one may say that it is at the present moment, of course, absolutely impossible to do business with private concerns or to undertake private enterprises and at the present moment there is actually no government with which one can or would care to deal.

Highly Socialistic Government Expected

What conditions will be when a government is crystallized, one can hardly forecast, further than to say that whatever government is finally established, it is sure to be of a much more socialistic nature than any government now existing, and it is probable that municipal, provincial and government ownership will be established to the greatest practical degree, with the result that promotion propositions will not be particularly attractive to private capital or enterprise, further than to act as builders and installers from the contract point of view.

Trade possibilities naturally have to await some financial reconstruction and it would seem that it will have to be based upon an exchange of goods and commodities, for the currency has been so demoralized both by heedless issues and the flooding of the country, as has become evident, with roubles made from official dies still remaining in Germany, and sent in from that country.

It would seem that there is nothing to do but to wait, regrettable as it may be; that the Allies cannot get into the country or do not feel that they can get into the country to help the Cossacks. In the absence of support from the Allies, no matter what may be the outcome of the present negotiations with the Central Powers, the German influence is rapidly spreading and establishing itself in a country where efficiency must have its reward.

The Parable of the Cotton Spinner

It would seem that there is very little more to be said at the present time unless it is to quote a story that is known to be founded on fact and may perhaps be accepted in the spirit of a parable:

Just outside of Moscow in one of the well-known manufacturing villages there was a cotton spinner who had an excellent business inherited from his ancestors. At the time of the revolution his operatives came to him saying that under the new order of things the mill belonged to the workmen; they proposed to take charge; they were going to elect their own foremen, and he would have to take his chance with the rest; if not elected to a managing position, he would have to work in the mill; that the profits were going to be divided according to schedules which the executive committee of the workmen would determine.

Naturally the proprietor refused to consider the proposition and ultimately was trussed up, carted to his dwelling in a wheelbarrow and dumped in his front yard.

In about a month a committee of the workmen paid him a visit reporting that the raw materials had all been used up; that they could get no further supplies, that the money in the safe had been distributed; that there was no more money with which

*17 West Forty-second Street, New York.

to pay wages, and begged him to come to their assistance to secure raw material and accommodation from the banks. He naturally told them they had undertaken to run the establishment and that he would have nothing to do with them.

About two weeks later, the committee returned in dire distress; the workmen had no money with which to buy food; the mill was idle, and they were still more urgent that he come to the rescue. In the end he drew up a contract setting forth that he was to take command; that he was to appoint the foreman, selecting the man best suited for that work; they were to put themselves entirely in his hands and work for wages that would be adjusted on the old basis with such increment as war conditions made necessary and possible. This contract was to be taken to the mill where all hands were to sign it.

A day or two afterward the committee returned with an automobile, presented the contract signed, or executed in some way, by all the workmen. The proprietor looked it over, saw that not a single change had been made in it and that it was in good order, he thereupon said: "Now, go take that automobile away and bring back the wheelbarrow, for I shall return to the works precisely as I was brought away." They took away the automobile and returned with the wheelbarrow.

German Persistence at Work

Were there time enough to wait, this would, perhaps, be the outcome in the case of the government, but one hardly cares to contemplate what may take place through German ingenuity and persistence, if there is too much delay.

It must not be inferred from the above example that it is even possible that the late Emperor may be re-established on the throne; but it is possible some other member of the Romanoff family, or what is quite as likely, some trusted member of some other princely family, may be set upon a very limited throne controlled by a broadly but rationally socialistic constitution, out of which when a new generation is educated may grow a republic.

Just at the moment of writing there seems a possibility that an object feared by many to be the real purpose of the Germans is about to be realized. The Germans have helped to bring about conditions and abetted enthusiasts to demoralize the army and the whole country, making it easy for them to overrun it. An attempt to do it may come now, but it is the impression of those who best know Russia that this will be unavailing, in that anything that would bring all factions together in opposition to the Germans would justify the Allies in sending it material assistance that will at least keep a large force of Germans busy, thus helping the situation as a whole.

Exports of Automobiles

In an article on "Exports of Automobiles" on page 1483 of THE IRON AGE of Dec. 20 it was erroneously stated that the Government statistics do not show countries of destination separately for commercial and passenger automobiles. These separate statistics have been published in the annual report on Commerce and Navigation of the United States issued by the Bureau of Foreign and Domestic Commerce. The statistics have not been brought out in this form as yet for the fiscal year 1917, but the bureau has prepared advance mimeographed tables in which exports of commercial automobiles and passenger automobiles are shown separately by countries of destination. Beginning with July of this year the Monthly Summary of the Foreign Commerce of the United States has shown these exports separately for the principal countries.

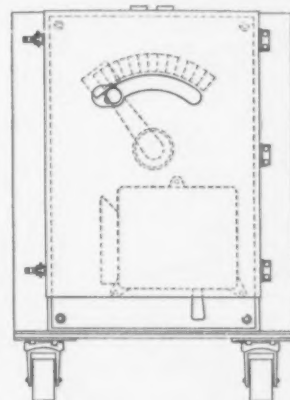
Portable Panels for Electric Welding

The Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has brought out a portable outlet panel for electric welding. These panels are made in two types both mounted on light trucks and are designed to be located adjacent to the point at which the actual welding is to be done.

The outfit consists of a control panel on which a circuit breaker having an overload release with magnetic blowout and a 13-point faceplate connected to a resistor mounted in the rear of the panel are located, a metal cover through which the handles of the rheostat and circuit breaker project being relied upon to protect the face of the panel. The resistor is made up of grids and is protected by an expanded metal cage. One of the panels is designed for metal electrode welding, having a capacity of 80 to 170 amp., and one metal electrode holder and one shield are supplied. For a wider range of work the other type which will handle metal electrode work from 80 to 160 amp. and light graphite electrode work up to 300 amp. is recommended. With this one graphite electrode holder and one metal electrode holder are furnished together with one mask.

In installing these panels in the shop an arc welding motor-generator set is located at a central point, and where low-resistance ground connections can readily be made throughout the shop, only one connector need be extended to the different receptacles. In the shop where metal floors or cast-iron bedplates are in use the metal pieces are welded to each other and the isolated sections tied together by an iron rod or heavy copper cable. In the shop where railroad tracks are installed the rails are bonded by arc welding the fish plates to the rails.

Where metal floors or tracks are not available, the two-wire system of distribution with double-pole outlets should be employed. Receptacles with connections to the panels are provided at different points throughout the shop and can be mounted out of doors if protected from the weather. Where the metal plates or rails are available single-pole receptacles and a single-wire cable to the portable panels are provided, but in other cases a two-wire cable is used. The cable should be of sufficient length so that the panel may be placed as near as possible to the work and the flexible cable from the panel to the electrode holder should be as short as is consistent to the class of work to be done.



A Portable Outlet Panel Mounted on a Light Truck Has Been Developed to Facilitate the Regulation of the Current Employed in Electric Welding Near the Point at Which the Work Is Being Done

A big increase in the trade of the Dominion of Canada is shown in the trade statement for November issued by the Department of Customs. For the eight months of the fiscal year which closed Nov. 30, Canada's trade reached the tremendous total of \$1,858,157,821. During the eight months period of 1916 the total aggregate trade of the Dominion was to the value of \$1,499,255,942. For the month of November alone the import and export trade of Canada reached \$268,541,563; for the corresponding month last year it was \$186,066,351, an increase for 1917 of approximately \$82,000,000.

The E. W. Bliss Co., Brooklyn, which is making torpedoes and other war munitions, will erect a new manufacturing building in Fifty-third Street, near First Avenue, South Brooklyn. It will be seven stories, 200 x 380 ft., and will cost about \$1,400,000.

The American Smelting & Refining Co., Perth Amboy, N. J., will build a new two-story welfare building, 50 x 150 ft., for its employees, to cost about \$80,000.

Steel Corporation Urged Prompt Hearing

Stand Taken Against Postponement of Disposition of Dissolution Suit, but Court Allows Motion in All Cases Except That of Machinery Company

A MOTION to continue until next October the seven anti-trust cases brought by the United States against the United States Steel Corporation, the United Shoe Machinery Co., the International Harvester Co., the American Can Co., the Eastman Kodak Co., the Quaker Oats Co. and the Corn Products Refining Co., was made by Attorney General Gregory in the Supreme Court at Washington, Jan. 3. While tacitly concurred in by five of the defendant corporations, it was vigorously opposed by attorneys for the Steel Corporation and the United Shoe Machinery Co., who contended that further delay would prove injurious to these corporations and to their many stockholders. The court, however, after hearing the arguments of attorneys, granted the motions of the Attorney General in all cases except that of the United Shoe Machinery Co.

In support of the motion to continue, Solicitor General Davis told the court that in order that the Government in this time of stress may not meet with competition from private enterprises in its financial operations and the flotation of its loans, the Treasury Department has been constrained to urge that all private financing on a large scale shall be avoided so far as at all possible. Quoting from the last annual report of the Secretary of the Treasury, Mr. Davis said that the Government must, if necessary, absorb the entire supply of new capital available for investment in the United States during the period of the war, and this in turn made it essential that unnecessary capital expenditures should be avoided in public and private enterprises. It was practically certain, Mr. Davis said, that the dissolutions which were sought by the Government in the pending cases would require financial operations on a large scale, if they were to be genuine and effective; therefore, important as the remedy sought in these cases is believed to be, "it must give place for the moment to the paramount needs of the hour."

Protest of Attorneys

The Attorney General having served notice of his intention to offer this motion, counsel for all the defendant corporations were in court. Messrs. Richard V. Lindabury, Cordenio A. Severance and David A. Reed, of counsel for the Steel Corporation, united in a protest against the proposed continuance on the ground that it was, first, unfair to the corporation, its stockholders and employees, and second, the reasons alleged by the Government for postponement were "no reasons at all." The Steel Corporation, Mr. Lindabury said, has been compelled to make and is now making large investments in additional plant facilities and otherwise to meet the war requirements of the Government. These expenditures may result in great embarrassment and loss to the corporation in case it is dissolved. It ought not, therefore, to be required to continue them in a state of uncertainty as to its future longer than is absolutely necessary.

The foreign business of the corporation—amounting to nearly \$100,000,000 a year when the testimony was taken—will obviously require great activity and large expenditures immediately upon the close of the war. These could hardly be undertaken with a threat of dissolution hanging over the corporation. If the corporation is to be dissolved, it ought to know it before that event.

Employees' Subscriptions

The record shows, Mr. Lindabury added, that over 32,000 employees had become stockholders of the corporation at the time the testimony was taken, and that under the corporation's profit-sharing plan thousands

more were investing in its stock every year. This process ought not to be allowed to go on indefinitely with no one knowing what the future of the stock is to be, or whether it is to have any future. Every important question of policy which confronts the Steel Corporation is affected by the pendency of this suit. These questions ought not to be determined upon a guess as to whether the corporation is to continue or is shortly to be dissolved. Its initiative and activity ought not to be clogged in this way longer than is necessary.

Referring to the suggestion of the Attorney General that the dissolution of the Steel Corporation would involve an important financial operation for its reorganization, counsel contended that should such a situation arise it would be time enough to deal with it then. If the decree of dissolution should be passed, and if it should then appear that new financing will be necessary, and if such financing should then appear likely to interfere with the financing of the Government, the difficulty could easily be met by simply postponing the date as of which dissolution should take effect. The whole matter would be in the hands of the Department of Justice, the Federal Trade Commission, or the court, and any one of them would have the power to prevent the embarrassment the Government fears. In conclusion, counsel urged the court that the defendants in this case "have a constitutional right to a speedy determination of the issue forced upon them by the Government's petition and appeal."

Machinery Company's Position

Attorneys for the United Shoe Machinery Co. presented equally urgent reasons for the prompt adjudication of the case against that corporation. It is of vital importance to the defendant, counsel insisted, to learn authoritatively whether its organization and methods of doing business are open to criticism. The company is the owner of about \$35,000,000 worth of machinery, which is in the hands of lessees under the leases which were attacked in this litigation, and the royalties paid for the use thereof constitute its principal source of income. The company, in the regular course of business, is almost daily called on to furnish machines to its customers and supply new manufacturers; in filling this demand under the lease system it regards certain clauses of its leases objected to by the Government as essential to its reasonable protection. The Government asks in this suit that the company be enjoined from enforcing these clauses, but that the machines be left in the hands of lessees, without the protection these clauses afford. The company is in consequence greatly embarrassed in conducting its business, and feels that in fairness its rights should be determined as speedily as possible.

While this litigation is pending, counsel pointed out, the company and its customers and the trade in general continue in a state of uncertainty as to what the defendant may lawfully do. The leasing system is one of historical growth and is complicated by many circumstances, and if any change is found by this court to be required by law, such change will require careful analysis of the conditions and considerable time to work out.

Counsel emphasized in conclusion the fact that so recently as Oct. 1, 1917, a motion was presented to the Supreme Court that this case be again advanced for reargument, which motion the Government did not oppose, although the reasons now presented by the Attorney General were quite as valid then as now, and the court assigned the case for argument Jan. 7.

Shipbuilding on the Pacific Coast

SEATTLE, Jan. 3.—At a recent meeting of the steel and wooden shipbuilding concerns of the Northwest, William Piggott, of the Seattle Car & Foundry Co., wired the Shipping Board that the plants will guarantee to launch and finish 600,000 deadweight tons of steel ships and 400,000 tons of wood ships during 1918. The shipyards have been notified that the Government wants them to run to capacity, and queries have been sent to the plants asking them to state what they can produce. It is now estimated that the ocean-going steel steamships to be built in Seattle will require the use of 220,000 tons of steel. In addition, there are now more than 50 wooden vessels slated for construction in the city during next year. Reports from 16 of the 22 shipyards in Portland show that there are now 12,000 men employed in the plants, and that 2,000 more will be required in the near future.

Figures show that Seattle, during 1917, launched 33 big ocean cargo ships, with 225,150 deadweight tons capacity, as compared with four carriers in 1916, with capacity of 29,600 deadweight tons. The Seattle payroll now totals \$1,600,000 a month, as compared with \$600,000 a month one year ago. The shipyards of the city now have 45 ships on the ways, of which 18 are steel, and 27 wooden freighters. There are now four big steel shipbuilding plants in operation, and this number will be increased during 1918 by two large steel plants. Besides this all of the plants have been enormously increased and extended during the year, and thousands of dollars have been expended in installation of new equipment and expansion of the company's shipbuilding facilities.

Radiation Loss Test of Insulating Brick

A reduction of 63 per cent in the amount of heat radiated from a boiler was the result of a series of tests made by C. A. Eastwood on a 560-hp. boiler in one of the stations of the Pacific Gas & Electric Co., San Francisco. The boiler was a Babcock & Wilcox unit and was operated ordinarily with a course of common brick covering the steam drums. In making the tests a rectangular can containing a measured quantity of water was placed on top of one drum and the boiler was run at its rated capacity for a period of three days. The rise in the temperature of the water was noted and from these observations the amount of heat radiated per square foot of surface per hour and that radiated from the total exposed area of the drums was determined as well as the quantity of fuel that was being burned to make up for this loss. The second test was run after a 2½-in. course of Nonpareil insulating brick manufactured by the Armstrong Cork & Insulation Co., Pittsburgh, had been placed over the common brick. From the observations made in both tests it was found that with the common brick 390 bbl. of oil must be burned per year to make up for the amount of heat radiated, while with the insulating brick only 144 bbl. would be needed, a saving of 63 per cent. It is stated that this would amount to \$172.20 per year or more than the cost of insulating brick and the labor required for installation, assuming that the oil cost 70c. per bbl.

The Indiana Manufacturers' Association, at its fourth annual convention in Indianapolis, elected Charles H. Barnaby, Greencastle, president; William M. Taylor, Indianapolis, first vice-president; J. L. Kimbrough, Muncie, second vice-president; Fred C. Gardner, Indianapolis, treasurer; H. A. Goble, Marion; Edgar Eckhouse, Indianapolis; I. W. Richardson, Terre Haute; E. V. Knight, New Albany; A. G. Seiberling, Kokomo, and W. P. Gleason, Gary, members of the board of directors.

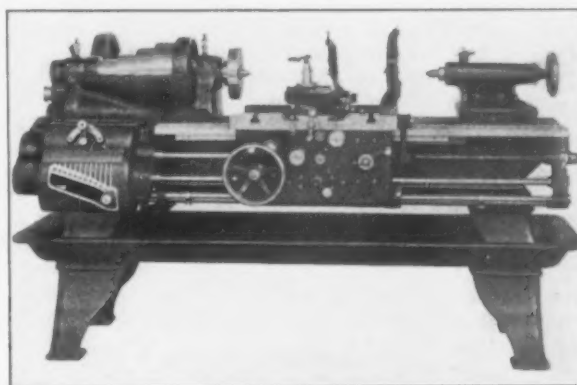
Combining patriotism with the Christmas spirit is the manner in which Brown-Wales Co. remembered its employees this year. Each employee was presented a Liberty bond, varying in value according to the length of time each had been in the employ of the company. In addition to this, the office was closed from Saturday noon until Wednesday morning.

A 16-In. Lathe for Toolrooms

Reducing the number of controlling levers as far as possible coupled with heavy construction are the features emphasized by the Rockford Tool Co., Rockford, Ill., for a 16-in. quick change toolroom lathe that has recently been developed. Other points about the tool are the use of both speeds of the countershaft to drive the lathe spindle in one direction thus doubling the number of rates available as well as prolonging the life of the belt. The lead screw too is not splined and a graduated chasing dial hung on a pivot is also provided.

An independent feed rod is provided for the feed which can be reversed by a lever on the right side of the apron. In all 36 rates varying from 0.00313 to 0.16667 in. per revolution of the spindle are provided. The carriage reverse mechanism is controlled by a lever at the right side of the apron thus permitting both speeds of the countershaft to run and drive the lathe spindle in one direction. In this way the number of working speeds for the spindle is doubled and the life of the belt is prolonged.

The lead screw which is 1 3/16 in. in diameter is employed for threading only and is not splined. Both of these features, it is pointed out, tend toward long life and continued accuracy. The half nut which engages the lead screw is made of phosphor bronze and is 4 in.



A Combination of Two Levers and a Gearbox Provides for 36 Different Feeds and Speeds in a Recently Designed 16-In. Toolroom Lathe while Both Countershaft Speeds Are Available for Driving the Spindle

wide. Any number of threads from 1½ to 80 per in. including the standard 11½ pipe thread can be cut. The reverse mechanism for changing the direction of rotation of both the lead screw and the feed rod is mounted in large bearings in the headstock. The driving mechanism consists of a cone of 12 gears, which provides that number of changes and three additional gears meshing with this cone provide 36 speeds and feeds all told. This number of changes, it is pointed out, can be secured by only two controlling handles.

The equipment regularly supplied includes a special gear for cutting the 11½ pipe thread, large and small faceplates, a double-friction countershaft, oil pan and the necessary wrenches. If desired, taper and relieving attachments can be furnished as well as a draw-in attachment and collets.

The Steel Co. of Canada will build an addition to its plant at Brantford, Ont., involving an expenditure of \$100,000. Extensions to the company's plant at Hamilton, Ont., are also under way, in addition to the coke oven plant which is expected to be completed by next spring. Although the company has large shell contracts on hand, more attention is now being paid to the development of business along ordinary lines, the extensions referred to being part of this policy. The shell plant at Montreal has been closed and the space will be utilized for other purposes. The shell plant at Brantford will be operated to capacity and shrapnel bars will be rolled at Hamilton.

The Wisconsin Steel Co., South Chicago, Ill., has built a large lunch room for its employees to whom it will serve hot meals at a moderate price.

Large Savings Attributed to Efficiency

General Crozier Says Costs Have Been Reduced
Several Million Dollars by Scientific Management — Reasons for Lack of Preparedness

WASHINGTON, Jan. 7.—Some of the reasons for the lack of preparedness in the way of heavy and light artillery and machine guns are briefly but pointedly touched upon in the annual report of General William Crozier, Chief of the Ordnance Bureau, which has been transmitted to the Secretary of War. General Crozier also describes the provision that has been made for supplying the American forces in France and those destined to be sent there with steel helmets, body shields and neck protectors. Incidentally he discloses the fact that, in spite of restrictive legislation, scientific shop management has not been wholly banished from the Government arsenals, but that experts are now at work at certain of these establishments in the effort to systematize operations and have already succeeded in bringing about a substantial increase in production. Progress in the manufacture of mobile artillery has been very much accelerated in recent months, General Crozier says, and very large orders have been placed under the various emergency appropriations.

That branch of the ordnance work devoted to an adaptation of motors to ordnance has increased very greatly due to the determination to motorize certain classes of field artillery, to increase the motor equipment on ammunition trains, and to have all such motor equipment supplied by the Ordnance Department. Other special types of motor equipment have also been added and highly satisfactory progress has been made, including the training of a very considerable number of officers and men in the operation and maintenance of such equipment.

Co-operation of Allies

Three-inch guns with split-trail carriages are now being manufactured in quantity and the 3.8-in. howitzer and its carriage have also been perfected and their manufacture is under way. The department has deemed it advisable to slow down the work of completing and testing the pilot 4.7-in. gun and pilot 6-in. howitzer with split-trail carriage because of the need for prompt manufacture of already developed types required by the war. Very cordial and useful co-operation is being given by our Allies in regard to field artillery material, which is being utilized to the greatest possible extent.

The designs for new large caliber cannon for sea-coast mounting and for railroad-car mounting were completed some time ago and types are now under manufacture. New types of 3-in. field guns and 3-in. anti-aircraft guns are being manufactured in quantity. These guns are fitted with the drop-block type of breach mechanism in place of the interrupted screw type previously used. The anti-aircraft gun is equipped with a semi-automatic breach operating device, while the field gun mechanism must be opened by hand but is closed automatically upon inserting the projectile. The work of placing the new type of field gun in service has been somewhat delayed due to the change in caliber whereby the gun has been converted to a 75-mm. (2.95-in.) gun and chambered for French ammunition. Thirty-five of these guns were completed prior to the authorization of this change, but will be relined and converted to the 75-mm. caliber before being placed in service. The new type of anti-aircraft gun for use on automobile truck mount has been designed and orders have been placed for a considerable number.

Elaborate Tests

Following the elaborate series of tests of machine guns at the Springfield armory which began last May, the special board conducting the tests submitted its report declaring a number of guns to be efficient for

service. Owing to the existence of a state of war the procurement of these types has been to a large degree a question of ability to secure deliveries; in other words, the number of machine guns on hand when war was declared was so small that it was necessary to keep going at the greatest possible capacity those machine gun factories which were already in operation and to utilize their output when the guns so manufactured had been reported by the board as efficient, even though they may not have been reported as most efficient. Every energy has been bent to secure satisfactory output, and considerable progress in this direction has been made. Requirements in this direction have vastly increased even within the last few months, both for divisional organization and for aircraft service. Satisfactory co-operation is being had with the Signal Corps in the procurement and application of machine guns to aircraft work.

The British type of helmet has been adopted by the Secretary of War as the official helmet for our army and has been designated as the steel helmet, model of 1917. Two hundred thousand of these helmets have been ordered from British sources of supply and will be delivered to our army in France. Preliminary to inaugurating the manufacture of these helmets in the United States, careful experiments were conducted to determine the best processes and the most suitable material. The manufacture of these helmets has been begun by several of the concerns in whose plants experiments were conducted.

Body and Neck Protectors

Experiments have been conducted with respect to various types of body shields and neck protectors. So far the most satisfactory articles for this purpose have been found to be the British body armor, which weighs a little over 16 lb., and the British silk necklet, weighing about 3½ lb.

Referring to the operations of the Frankford Arsenal, which, because of the peculiar character of the work done at that establishment, have been less interfered with by the prohibitions against the use of scientific shop management systems, General Crozier says:

The system of shop management as inaugurated several years ago in connection with the manufacture of small-arms ammunition, and subsequently extended to the manufacture of artillery ammunition, etc., continued to prove satisfactory, and the saving which may be attributed almost entirely to such improved shop management, exclusive of increases in the cost of material, has been considerable. Briefly it may be stated that the aggregate savings in the manufacture of small-arms ammunition, artillery ammunition and sights, instruments, etc., since the introduction of scientific shop management have amounted to approximately \$2,464,205.06. The savings made by the utilization of surplus stock and scrap have aggregated during the five years, and since the establishment of the stock fund, approximately \$1,826,520.31.

The services of an efficiency engineer, H. L. Gantt, were procured during the year and he has proceeded, by utilization of appropriate charts and tables, to insure that work is provided in advance of every machine, and there is no question that he has materially increased production in the two shops on which he has thus far bent his energies.

The artillery ammunition department and the small-arms ammunition department have been organized during the past year along the lines of production, design and inspection, and the results thus far have been most gratifying. The assembling of artillery ammunition has, in fact, trebled within the last four months, and experimental work has proceeded with a celerity never heretofore attained. It is believed that inspection is now better than ever; the inspecting officer has been given charge of all material and components in the various component rooms and, in the case of ammunition requiring ballistic test at the proving ground, he has charge of the ammunition until the tests have been completed, with authority to accept or reject the material tested.

An unprecedented labor turn-over has embarrassed the representatives of the Ordnance Bureau in charge of the Springfield armory. At the Rock Island arsenal there have been marked improvements in shop administration and in manufacturing methods which are indicated by the reduction in labor cost. Notwithstanding the fact that the cost of materials has increased, the net saving during the past year on the output of the arsenal amounted to \$805,000,000, or 20.47 per cent of the total output.

Some interesting figures are presented in the report showing the downward tendency of manufacturing costs at the Watervliet arsenal, the operations of which are confined almost wholly to artillery.

EXTENSIVE HOUSING PLAN

Large Appropriation Asked by Shipping Board— More Money for Ships

WASHINGTON, Jan. 8.—The United States Shipping Board has asked Congress for an additional appropriation of no less than \$701,000,000, thus swelling the total to be appropriated for the operations of the Emergency Fleet Corporation to a round \$2,000,000,000. Of the additional sum now sought the board urgently asks that \$47,000,000 shall be immediately appropriated to provide for the extension of shipyards and \$35,000,000 for a comprehensive housing project which, in the opinion of Chairman Hurley and his associates, will solve the problem now presented by the difficulty of securing living accommodations for a large number of men in the vicinity of the yards engaged upon shipping board contracts.

The additional appropriation of \$701,000,000 is to be largely expended in the building of fabricated steel ships, although a portion of it will cover contracts for standard steel vessels and a small amount for a few wooden ships to be built on the Pacific coast. The Government-owned shipyards now have contracts for about 500 fabricated steel ships which, it is estimated, will keep them busy until June 1, 1919. There are also other yards in which fabricated ships can be assembled and this feature of the Fleet Corporation's program promises so well, especially for early deliveries, that the Shipping Board is disposed to develop it as fully as possible.

The labor supply presents an increasingly serious problem as the various shipyards attempt to increase their output by double and triple shifts, but the Senate Commerce Committee has pledged itself to the shipping board to lend its aid in every possible way. As indicating the lengths to which legislation may go, if necessary, the committee on Jan. 4 adopted a resolution advising the shipping board to commandeer Staten Island ferry boats and trolley lines for the purpose of transporting workmen to and from yards on the island. These yards are reported as needing immediately 10,000 additional workmen who can not be moved to and from work under present conditions.

The colossal project for housing workers on the shipbuilding program covered by the \$35,000,000 estimate sent to Congress by Chairman Hurley has been in contemplation for six weeks and has been worked out in considerable detail. Admiral Harris, who served as general manager of the Fleet Corporation for a few days, is entitled to a measure of the credit for developing the housing plan, although it is now admitted that there was no legal authority for spending the large sum which he proposed to devote to building houses for workmen without consulting his superiors. Admiral Harris' original estimate of \$12,000,000 has been nearly trebled, and it is expected that Congress will provide the money in a special bill that will be put through without loss of time. The development of the plans of the board for the disbursement of this money will be followed with great interest by all manufacturers and an outline of the project which has just been placed before the Senate Committee on Commerce in a letter

from Chairman Hurley to Senator Fletcher will be read with interest. He says in part:

Sparrows Point, Md., has been in need of housing facilities, and the shipping board is helping the Bethlehem Shipbuilding Corporation (Ltd.) to purchase about 400 5- and 6-room brick houses to care for the shipyard employees. Baltimore, which is about 10 miles from the shipyards, is co-operating with the United States Shipping Board to the fullest extent and is giving invaluable assistance in helping to place the shipyard employees in homes, rooms and apartments. Chester, Pa.; Wilmington, Del.; Newport News, Va.; Newburgh, N. Y., and many other shipbuilding points are being investigated and plans are under consideration for ameliorating the housing situation.

We are treating the housing proposition from a very broad viewpoint, and in all cases where community sites are being planned are providing all the social, moral and artistic features that will add to the social, moral and physical well-being of the shipbuilding employees who will live in these communities. While protecting the investment of the Government, we are also adjusting the rents, purchase terms, etc., on such a basis that they will be within normal reach of the men who will occupy the houses.

About \$35,000,000 will be required to carry out the contemplated housing program of the United States Shipping Board. A very considerable amount will also be required by the Army and the Navy. A bill is being prepared by the housing committee of the Council of National Defense, and I hope that it will be favorably acted upon by Congress, providing finances for the necessary housing. Housing facilities must be obtained for the large army of labor that must live where the Government's operations are being conducted on such an enormous scale, and should be co-ordinated and standardized in one commission for all branches of the Government.

It is understood that the bill referred to by Mr. Hurley will be simultaneously presented in both Houses with a view to saving time. The President has indicated that he will exert his powerful influence to procure speedy action.

Important Decision on War Excess Profits Tax

WASHINGTON, Jan. 8.—That the war excess profits tax can not be deducted in ascertaining the net income upon which to apply the excise tax levied upon manufacturers of munitions is the substance of an important ruling by the Commissioner of Internal Revenue. Inasmuch as the war excess profits tax in the case of many manufacturers of munitions will amount to a very large proportion of their income, the effect of this ruling will in certain instances amount to doubling the excise tax.

Commissioner Roper holds that the munition manufacturers' tax as provided by Title III, Section 301 of the Act of Sept. 8, 1916, is an excise tax and not an income tax. It is measured by the net income ascertained as provided by Section 302, Title III of the act referred to. Paragraph (d) of Section 302 provides for deduction from "gross income received or accrued from the sale or disposition" of the product of munitions manufacture of "taxes of all kinds paid during the taxable year with respect to the business or property relating to the manufacture."

"The net income by which the war excess profits tax is to be measured," says the Commissioner, "is the net income determined for income tax purposes, but without the deduction of income or excess profits tax paid within the year. The tax upon this income is in addition to and has no taxable relation to any other tax."

There will be strong opposition to the commissioner's ruling and it is quite probable that the matter will be ultimately determined by an appeal to the courts.

Employees of the Driver-Harris Co., Harrison, N. J., manufacturer of wire, etc., have shared in a distribution of a bonus of \$16,000 as a Christmas gift. Those employed for six months received 5 per cent of wages and for one year 6 per cent, the rate continuing until a maximum of \$250 is reached. Employees who have been at the plant for the past six months have also received a \$500 life insurance policy in addition.

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Much Ineffective Steel Capacity

It is impossible to lay too much stress upon the iron and steel industry's need for more transportation. The record of the year just ended is a very disappointing one in the matter of production. In pig iron we fell behind the output of 1916 and in ingot production we made but a very slight gain, a gain altogether out of proportion to the large amount of new construction. Our annual summaries of new construction have shown new open-hearth steel capacity brought in to the amount of 4,205,000 tons in 1916 and 4,326,500 tons in 1917, details of the latter being given in the Annual Review Number last week. The American Iron and Steel Institute report for 1916 showed a total rated capacity, ingots and castings by all processes, of 45,787,780 tons at the end of 1915 and of 49,613,888 tons at the end of 1916.

It is not worth while at this time to endeavor to estimate the amount by which actual production is falling below rated capacity through the incidents and accidents to which the operation of works is normally subjected. The great fact is that the production of steel ingots and castings in 1916 was 42,773,680 tons, and that the 1917 output was hardly more than one million tons greater, while the available capacity was several million tons greater, and the actual rate of output at the present time is probably less than the average rate in 1916.

These millions of tons of capacity were added at great expense of capital, and a full supply of steel is vitally essential for conducting the war to the best advantage. Either the full capacity existing should be operated, or it should be shown why it is not necessary to have it in operation. Beyond question the first step is to provide adequate transportation facilities for the industry. There should be no delay in attacking the problem from this angle.

Judge Gary's Chicago Address

In his notable address before the Commercial Club of Chicago last Saturday, Judge Gary courageously discussed the labor situation. He pointed out that the country cannot take advantage of its natural resources without having men in sufficient numbers in the workshops of the country and

expressed the opinion that to meet the present emergency the United States "should immediately, under proper conditions and reasonable restrictions, draw from the islands of the sea and from oriental countries enough men, including soldiers and sailors, to meet every demand." While recognizing that objections have been made to the admission of certain nationalities even temporarily to our shores, he insisted that winning the war is the paramount consideration. Doubtless Judge Gary had in mind the millions of brown men in the Philippines who are believed to be loyal to the United States and could be used as soldiers, sailors or workmen to help win the war against the Central Powers, but it is also probable that he had in mind the employment of natives of China, as is already being done on an extensive scale behind the battle line in France. His position will, of course, be assailed by labor agitators and many other people will dissent, but if these objectors are asked how they propose to obtain enough men to do the manual work connected directly with the war and to fill the places of the men who have been or will be called from shops to the colors, they will not easily find an adequate answer.

It is interesting to note in this connection that Secretary of War Baker is urging the passage by the Senate of the House resolution providing for the drafting into the Federal service of 27,000 members of the Philippine National Guard and Scouts and also that the California State Development Board is favoring the importation of experienced Chinese farmers to California for the period of the war. When any organization in California is willing to admit Chinamen even temporarily, a decided change of sentiment has taken place. The proposed mobilization of 3,000,000 workers for agricultural, shipbuilding and war contract plants which has been inaugurated by the Department of Labor through the United States Employment Service will probably accomplish very desirable results. Until this and other plans have been tried, it is not likely that Congress will adopt Judge Gary's suggestion, but if the war should continue for two or more years, it may be compelled to do so.

Aside from the discussion of the labor question, there is nothing in Judge Gary's address which is likely to arouse vigorous opposition. His discussion of plans for promoting the welfare of the

United States after the great war is intensely American along broad lines. Naturally it cannot be specific in regard to all the subjects mentioned, especially such matters as the tariff, but the general principles of protecting the United States without adopting a narrow policy of exclusion will be generally approved. Certain it is that the consideration of such subjects as the tariff, the merchant marine and others referred to by Judge Gary cannot wisely be postponed for an indefinite period. They should receive attention at once and continuously.

Some Results of Efficiency

The long-continued warfare of labor unions against scientific shop management systems resulted in 1916 in various amendments to appropriation bills excluding these systems from various Government departments. But it seems that these amendments failed to cover the excellent methods which have been in vogue and still are at the Frankford Arsenal. General Crozier, chief of the Bureau of Ordnance, in his annual report gives some surprising figures as to what has been accomplished. He says that the system of shop management inaugurated several years ago in connection with the manufacture of small arms ammunition and later extended to the manufacture of artillery ammunition, continued to prove satisfactory and the saving, due almost entirely to it, has amounted to about \$2,464,000. Even in these days of tremendous figures in dollars and tonnages, an item of two and one-half million dollars in one arsenal is worthy of consideration and it is a matter of congratulation that, although working in a very limited field, an efficiency system has brought about such desirable results. It is not, however, a matter entirely of dollars and cents. Important as that is, even more important is the desirability of having work carried on in a Government plant in an efficient manner for the reason that efficiency commands respect, while wasteful and slovenly methods bring the Government into disrepute. To a greater extent than ever is it important in war times to have the most efficient methods and the least waste everywhere, and the statutes prohibiting scientific management should be wiped from the books, so that thorough efficiency can be established in all departments of the Government.

Status of By-Product Coking

A timely contribution to current knowledge is the summary of by-product cokemaking capacity, in existence and prospect, furnished by C. J. Ramsberg to the Annual Review Number of THE IRON AGE, published last week. Names of owners, number and type of ovens, and capacity in coke, ammonia and toluol, are given. Following is a summary of the ovens completed on Jan. 1, 1918:

Number of plants	54
Number of ovens	7,495
Coal carbonizing capacity	35,625,000
Coke capacity	26,005,400
Ammonia (as NH_3), net tons	89,658
Toluol, gallons	11,646,000

It should be observed that the totals given above are simply the sums of rated capacities of individual

plants. The outputs given would not necessarily be realized universally, while the ammonia and toluol recovery is not complete at all plants.

The following summary, referring to rated capacities, shows the progress in new construction:

	Net Tons Coke Rated
Jan. 1, 1917	22,479,400
Completed in 1917	3,526,000
Jan. 1, 1918	26,005,400
Expected, first half 1918	5,770,000
July 1, 1918	31,775,400
Expected later	1,315,000
Eventual total	33,090,400

The above summary excludes two plants in Canada, mentioned in Mr. Ramsberg's statement of construction work in progress.

For ordinary commercial operation a deduction of about 10 per cent from the total of rated capacities will probably furnish the approximate measure of the actual coke output to be expected. Without any contribution from new ovens, the by-product coke production in 1918 would exceed 23,000,000 tons, while with a conservative allowance for the new ovens the year's output should easily exceed 27,000,000 tons. This compares with an actual production in 1916, as reported by the United States Geological Survey, of 19,069,361 tons, representing an increase of 42 per cent in two years.

The increase in by-product coke output is of particular importance in view of the failure of beehive ovens to maintain their rate of output in 1917. In 1916 the beehive ovens produced 35,464,224 tons of coke, or 300,000 tons more than in their previous record year, 1907; but in 1917 their output was less, as there was an increase in by-product coke production, and yet the total supply of coke to blast furnaces decreased, as shown by the decrease of some three-quarters of a million tons in pig-iron.

There should be an ample supply of coke, in the circumstances. If the production of beehive coke in 1918 should be equal to its production in 1916, and the by-product production as indicated above, then the total would be such as to accommodate a pig-iron production in the year of 45,500,000 tons, provided the blast furnaces consumed the same proportion of the total output of coke as was the case in 1916. It is quite doubtful if there is that much blast-furnace capacity. What is known is that the pig-iron output in 1916 was 39,434,797 gross tons, with the existing furnaces operating almost full, while in 1917, with quite a number of new furnaces available, the output dropped to about 38,600,000 tons by reason of insufficient coke supply.

The chief difficulty in the matter of coke last year was lack of sufficient transportation for Connellsville coke. That region fell about 3,500,000 tons short of its physical capacity in 1917. It should be no great trick to move this additional amount of coke, with the improvement that is to be made in railroad transportation. It would involve less than half a billion ton-miles of freight movement a year, and the railroads in the past year had a total movement of more than 400 billion ton-miles, so that a full movement of Connellsville coke requires only that the region be given additional service equal to less than one-eighth of one per cent of the total capacity the railroads showed when operated under their individual managements.

There is clearly in prospect in the near future an

output of 30,000,000 tons of by-product coke a year. That is more than double the output in 1915, the record year in its time, and it far exceeds the total output of both beehive and by-product coke in any year prior to 1905, for previous to that year the best output had been 25,401,730 tons, in 1902.

Railroad Equipment Hereafter

An important result of the Government supervision of railroad operation undoubtedly will be a great reduction in running inventories of repair materials for rolling stock. Interchangeability will be the order of the day. It will be demanded to expedite manufacture of the large numbers of cars which under Government financing are expected soon to be bought. In the interval of supervision under the Railroad War Board, car builders have settled on designs of the various forms of cars in common use, presumably in preparation for the 100,000-car purchase which has long been regarded as a possibility. The separate railroads did not seem to get together on their own or the builders' designs, but there will be some degree of coercion, if necessary, following the legislation now in preparation.

The appointment of railroad experts in charge of given districts is expected. Then the needs of the different districts will be scheduled and finally a distribution will be made of the calculated number of cars, all to the same general model for a given type, but with such latitude as to couplers, draft gear, brake beams and other features as will preserve interchangeability and at the same time work for maximum output. In connection with output it must be remembered that while the car builders have not been operating at 50 per cent capacity—and for this thanks to business for foreign roads—they have had to get into war business, such as making shell forgings, and with much dislocation of organization. This will make increased car output difficult in the face of diminishing labor supply.

While it is announced from Washington that existing purchasing organizations of the roads will continue to provide for their separate needs, it is to be expected that large tonnage purchases, as of cars, locomotives and rails, affecting in an important way the country's productivity, will be under central control. At any rate, central authority will demand interchangeability and no longer will a southwestern line need to carry in stock ten types of a thing for repairing cars which are doing duty on a road in the Northwest. Here as in many other lines the national demand for economy will break the designer's habit of stamping his creations with modifications of a non-essential character.

Fishel & Marks, dealers in iron and steel, 3013 55th St., S. E., Cleveland, have dissolved by mutual consent Dec. 24, 1917, and the corporation of the Fishel & Marks Co. has been formed under the Ohio laws with a capital stock of \$250,000 fully paid in and non-assessable. The assets of the former partnership remain intact and are carried in the company as a surplus. The officers of the new company are: Henry R. Fishel, president; Alvin S. Fishel, vice-president; Jos D. Marks, secretary and treasurer; Leo H. Marks, assistant treasurer.

AN UNSETTLED ORE SITUATION

Views of Lake Superior Producers on the Proviso for Price Revision

CLEVELAND, Jan. 7.—The Lake Superior iron ore situation is left in a very unsettled condition by the action of the War Industries Board in making contracts which will involve deliveries after March 31 subject to a price revision. This means that when ore producers start to sell ore for 1918 delivery they will face an uncertainty as to prices that will continue the entire year, unless the Government changes its attitude and recognizes the seasonal nature of the iron ore trade and the conditions which call for the maintenance of a price once established. While there have been a good many ore reservations for the coming year, the mining companies have generally avoided actual sales, pending the establishment of prices, and the action of the Government in providing that there may be revisions after April 1 is considered particularly objectionable this year, when many ore producers feel that season prices should be advanced because of the increased mining costs.

The Government desires maximum production, but many mining companies whose cost of production is high will not feel inclined to go ahead and sell their output when they are confronted with the possibility of having to revise their prices to lower than those of the past season. The situation particularly affects the operation of underground mines, which in 1917 were 75 per cent of the Lake Superior mines operated and produced nearly 50 per cent of the ore. The desirability of having a full production of ore from the underground mines of the old ranges to mix with the Mesaba ores is well known.

When ore prices for 1917 were established in November, 1916, pig iron was selling in the Valley at \$30 for Bessemer and \$25.50 for basic. While the 1917 ore prices were \$1.50 higher than those of the previous year, 50 cents of this was absorbed by an advance in the vessel rate and a considerable portion of the remainder went for additional mining costs due to higher wages and supplies, and the latter have continued to advance. Pig iron at present, under Government price regulation, at \$36.30 for Bessemer and \$33 for basic, is considerably higher than when the 1917 ore prices were named.

Four important items figure in increased mining costs for 1918: increased wages to labor, coal, supplies, and added overhead. The higher costs involved in the first three items are now in effect. The additional overhead is at present an uncertain quantity, but mine operators face a curtailment of production due to the loss of miners who have been called to the colors and to a reduction in the average efficiency of the men employed.

Three 10 per cent wage increases have been made since the 1917 ore prices were established—one in December, 1916, and the others in May and October, 1917. The average increase in labor cost for 1917 over that of 1916 was approximately 15 per cent, but the full effect of the three advances, amounting to 33 per cent from the basis existing before December, 1916, will be felt during 1918. The iron mining companies place contracts for their coal supplies for a full year, starting with July. These coal contracts for the year beginning July 1, 1916, were at \$2.40 per ton, and for the year beginning July 1, 1917, \$5.25 per ton, making an average price of \$3.83 per ton during 1917. For the year starting July 1, 1918, the Government price of \$3.94 will apply, making an average price of \$4.60 per ton during 1918, or an increase of 77 cents per ton this year over 1917. It is estimated that the cost of mining supplies, including rails, wire rope, powder, etc., have advanced 10 per cent.

Apart from higher mining costs, there is the item of 15 per cent advance in the rail transportation rate from the mines to the upper Lake docks made last summer. There is also the 3 per cent war tax on the cost of transportation from the mines to the lower Lake docks. Were an advance in prices allowed, added royalties would take a share of the increase from some mines. In the case of several underground properties the royalty increases at the rate of 40 per cent above a \$5 price. In other words, if there were a 50-cent advance over a \$5 basis 20 cents of this would go to the fee owners.

McKinney Steel Co. Succeeds Corrigan, McKinney & Co.

The firm of Corrigan, McKinney & Co., Cleveland, long prominent in the iron ore and pig iron industry, ceased to exist as a partnership Jan. 1 and was succeeded by the McKinney Steel Co., an incorporated company, which will continue to operate under their present names the various properties and subsidiary companies which it controls. The partnership consisted of Price McKinney, James W. Corrigan and Mrs. L. M. Burke, widow of the late Judge Stephenson Burke, one of the early partners. The officers of the new company are: Price McKinney, president; James W. Corrigan, vice-president, and J. E. Ferris, secretary and treasurer.

James Corrigan, the founder of the firm, in the early eighties organized a fleet of ore carriers and later formed a partnership under the name of Dalliba, Corrigan & Co. to engage in the mining, shipping and selling of Lake Superior iron ore. During the panic of 1893, the firm, which had been reorganized as Corrigan, Ives & Co., failed, and Price McKinney was appointed receiver. He brought the firm out of its financial difficulties, took part in its reorganization as Corrigan, McKinney & Co. and became head of the firm on Mr. Corrigan's death in 1908. James W. Corrigan, one of the partners, now vice-president, is the son of the founder. J. E. Ferris has been identified with the firm for many years in the same capacity as he holds in the incorporated company.

Corrigan, McKinney & Co. some years ago extended their activities to the production of pig iron, and later to the making of steel, and own and operate under the name of the River Furnaces, a Cleveland plant including four blast furnaces and an open hearth steel plant; the two Josephine furnaces of the Josephine Furnace & Coke Co., Josephine, Pa.; the Scottdale furnace of the Scottdale Furnace Co., Scottdale, Pa., and the Genesee furnace of the Genesee Co., Charlotte, N. Y. The formation of an incorporated company will not result in any changes in the various operating heads of the company's interests.

Rope Improperly Classified

WASHINGTON, Jan. 8.—The Bureau of Exports of the War Trade Board has been advised that attempts have been made to export wire rope, classified as "galvanized wire," without an export license. As this is regarded as an evasion of existing requirements, the Bureau has promulgated the following memorandum:

"The attention of shippers is called to the fact that export licenses are required for all shipments of iron and steel wire rope, cable, and strands consisting of six or more wires, whether or not the wires are painted, galvanized, or coated in any way, and that it is necessary to obtain an export license for every shipment of this material. It should also be noted that the act of improperly classifying material in order that it may be exported without a license subjects the exporter to the penalty of the law."

The Turner & Seymour Mfg. Co., Torrington, Conn., has given its salaried force, including office employees and foremen, a 10 per cent bonus on their earnings for 1917. The company recently adopted an 8-hr. schedule with time and one-half for overtime.

CONTENTS

Government Will Not Buy for Railroads.....	131
Revision of Excess Profit Tax Law Proposed.....	132
Spacing Mechanism for Drilled Holes.....	133
Engineers Needed	133
Important Wage Advances.....	133
Appeal to Iron and Steel Industry.....	134
Rulings as to Excess Profits Tax Law.....	136
Crux of the War Situation Is Labor.....	137
Hardware on War Basis.....	139
Production of Metals in Canada.....	139
British Iron and Steel Trades in 1917.....	140
Hydrostatic Press for Testing Shells.....	141
Unionizing Industry as a War Measure.....	142
Safety First Inclosed Lever Switch.....	143
Prospect of Trade Relations with Russia.....	144
Exports of Automobiles.....	145
Portable Panels for Electric Welding.....	145
Steel Corporation Urged Prompt Hearing.....	146
Shipbuilding on the Pacific Coast.....	147
Radiation Loss Test of Insulating Brick.....	147
A 16-In. Lathe for Toolrooms.....	147
Large Savings Attributed to Efficiency.....	148
Extensive Housing Plan	149
Important Decision on War Excess Profits Tax.....	149
Editorial:	
Much Idle Steel Capacity.....	150
Judge Gary's Chicago Address.....	150
Some Results of Efficiency.....	151
Status of By-Product Coking.....	151
Railroad Equipment Hereafter.....	152
An Unsettled Ore Situation.....	152
McKinney Steel Co. Succeeds Corrigan, McKinney & Co.	153
Rope Improperly Classified.....	153
Output Falls Off.....	154
Blast Furnace Notes.....	155
Iron and Steel Markets.....	156
Drastic Regulation of Coal and Coke Contracts.....	166
Prices Finished Iron and Steel f.o.b. Pittsburgh.....	167
Metal Markets	168
In Time of War Preparing for Peace.....	169
Personal	170
Changes in Philadelphia Machinery District.....	171
Exports Are Hampered by Embargoes.....	172
Further Explanation of Scrap Prices.....	173
Better Housing Conditions Planned for Steel Workers at Chicago	173
Witherbee, Sherman & Co.....	173
Steel Shortage in Canada.....	173
Stops Night Work.....	174
Iron and Industrial Stocks.....	174
Urge Use of Domestic Manganese Ores.....	175
New Gun Plant of the Tacony Ordnance Corporation....	175
Lake Superior Ore Shipments by Water.....	175
San Francisco Plants Closed by Strike.....	175
Corporation Stock for Employees.....	175
Active Year for the Bureau of Standards.....	176
Ship Program for Canada.....	177
Further Government Control of Steel.....	178
First McDonald Bar Mill.....	179
New Demurrage Rules.....	180
Wages of Puddlers Again Advanced.....	180
Machinery Markets and News of the Works.....	181

OUTPUT FALLS OFF

A Loss of 24 Stacks in December

Production Nearly 13,000 Tons Less a Day Than in November

Pig-iron production declined an average of 12,862 tons a day in December, the total for the month amounting to 2,882,918 tons, or 92,997 tons a day, as compared with 3,205,794 tons for the 30 days of November, or 106,859 tons a day. While December usually shows a decline from November, the falling off last month was especially heavy, the daily rate being the lowest since August, 1915. Coke shortage and other difficulties compelled the banking of many furnaces and a net loss of 24 stacks from the active list.

Daily Rate of Production

The daily rate of production of coke and anthracite pig iron by months, from December, 1916, is as follows:

Daily Rate of Pig-Iron Production by Months—Gross Tons			
	Steel Works	Merchant	Total
December, 1916	74,264	28,273	102,537
January, 1917	72,394	29,249	101,643
February	65,280	29,193	94,473
March	73,731	31,132	104,863
April	79,031	32,134	111,165
May	77,561	32,677	110,238
June	76,805	32,197	109,002
July	76,440	31,380	107,820
August	71,436	33,336	104,772
September	73,290	31,175	104,465
October	76,664	29,886	106,550
November	77,135	29,724	106,859
December	66,605	26,392	92,997

Output by Districts

The accompanying table gives the production of all coke and anthracite furnaces in December and the three months preceding:

Monthly Pig-Iron Production—Gross Tons

	Sept. (30 days)	Oct. (31 days)	Nov. (30 days)	Dec. (31 days)
New York	182,171	202,939	188,760	175,999
New Jersey	25,169	27,397	28,205	19,495
Lehigh Valley	110,418	117,523	110,758	106,760
Schuylkill Valley	75,727	80,478	80,121	60,949
Lower Susquehanna and Lebanon Valley	84,758	90,386	91,022	69,228
Pittsburgh district	638,611	666,731	663,909	619,870
Shenango Valley	140,205	161,615	148,617	133,480
Western Pennsylvania	211,513	218,814	203,256	184,520
Maryland, Virginia and Kentucky	90,466	100,446	93,653	81,480
Wheeling district	118,195	122,066	112,685	86,621
Mahoning Valley	309,570	316,906	274,788	247,191
Central and Northern Ohio	271,519	275,996	266,718	230,575
Hock. Val., Hang. Rk. & S. W. Ohio	62,499	64,061	66,334	51,350
Chicago district	457,330	455,045	481,537	432,028
Mich., Minn., Mo., Wis. Col. and Wash.	108,325	117,397	112,266	113,350
Alabama	222,687	260,469	251,694	237,227
Tennessee and Ga.	24,791	24,769	31,471	32,795
Total	3,133,954	3,303,038	3,205,794	2,882,918

Among furnaces blown in in December were one Susquehanna in the Buffalo district, Steelton No. 4 in the Lower Susquehanna Valley, one Eliza in the Pittsburgh district, Newcastle No. 3 in the Shenango Valley, Colonial in western Pennsylvania, Globe in the Hanging Rock region, and Miami in the Chicago district.

The list of furnaces blown out includes one Lackawanna in the Buffalo district, two Worth stacks in the Schuylkill Valley, Steelton No. 2 in the Lower Susquehanna Valley, Robeson in the Lebanon Valley, two Edgar Thomson and Neville Island in the Pittsburgh district, Newcastle No. 4 and Atlantic in the Shenango Valley, three Maryland stacks, Mingo in the Wheeling district, one Hubbard in the Mahoning Valley, Newburgh and Franklin in Ohio, one Gary in the Chicago district and two Pioneer stacks in Alabama.

Capacity in Blast Jan. 1 and Dec. 1

The following table shows the daily capacity in gross tons of furnaces in blast Jan. 1 and Dec. 1 by districts:

Location of furnaces	Coke and Anthracite		Furnaces in Blast	
	Total number of stacks	Jan. 1 Number in blast	Dec. 1 Number in blast	Dec. 1 Capacity per day
New York:				
Buffalo	19	18	18	5,801
Other New York	4	3	3	224
New Jersey	4	4	4	911
Ferro	1	1	1	30
Pennsylvania:				
Lehigh Valley	21	14	15	3,749
Spiegel	2	2	2	222
Schuylkill Val.	13	7	9	2,606
Spiegel	1	1	1	90
Lower Susquehanna	8	6	6	1,786
Spiegel	2	2	2	97
Lebanon Val.	8	5	7	880
Ferro and Spiegel	3	1	2	87
Pittsburgh Dist.	53	45	47	22,134
Ferro and Spiegel	4	2	2	256
Shenango Val.	19	14	16	4,519
West. Penn.	25	21	23	6,569
Ferro and Spiegel	3	1	2	78
Maryland	4	1	4	1,525
Wheeling District.	14	9	10	3,756
Ohio:				
Mahoning Val.	26	21	20	9,368
Central and Northern	26	20	23	8,810
Hocking Val., Hang. Rk. & S. W. Ohio	17	15	14	1,885
Ill. and Ind.	38	29	34	15,755
Ferro	1	1	0	0
Michigan, Wis. & Minn.	12	10	10	2,720
Colorado, Mo., & Wash.	7	4	5	1,025
Ferro	1	0	1	145
The South:				
Virginia	16	13	12	1,620
Ferro	3	2	3	125
Kentucky	7	5	5	715
Alabama	37	32	32	8,310
Tennessee & Ga.	16	11	12	1,155
Total	417	321	345	106,950

Diagram of Pig-Iron Production and Prices

The fluctuations in pig-iron production from January, 1909, to the present time are shown in the accompanying chart. The figures represented by the heavy lines are those of daily average production by months of coke and anthracite iron. The two other curves on the chart represent monthly average prices of Southern No. 2 foundry pig iron at Cincinnati and of local No. 2 foundry iron at Chicago. They are based on the weekly market quotations of THE IRON AGE.

Production of Steel Companies

Returns from all furnaces of the United States Steel Corporation and the various independent steel companies show the following totals of steel-making iron month by month, together with ferromanganese and spiegeleisen. These last, while stated separately, are also included in the columns of "total production."

Production of Steel Companies—Gross Tons

	Pig, total production			Spiegeleisen and ferromanganese		
	1915	1916	1917	1915	1916	1917
Jan.	1,115,944	2,251,035	2,244,203	18,041	24,866	38,792
Feb.	1,237,380	2,183,845	1,829,846	13,319	23,877	32,137
Mar.	1,551,082	2,365,116	2,285,430	12,274	29,388	36,563
Apr.	1,584,111	2,316,768	2,370,937	12,337	31,862	39,595
May.	1,694,290	2,408,890	2,404,380	13,440	35,844	37,701
June.	1,770,657	2,295,784	2,304,155	19,200	38,597	30,829
July.	1,949,750	2,306,303	2,369,630	17,854	31,353	43,884
Aug.	2,101,818	2,313,122	2,214,513	27,463	33,338	39,492
Sept.	2,129,322	2,309,710	2,198,705	23,159	29,451	42,235
Oct.	2,281,456	2,530,806	2,376,589	23,992	34,566	48,691
Nov.	2,198,459	2,404,210	2,314,857	28,741	44,975	34,688
Dec.	2,283,047	2,294,620	2,064,757	25,004	43,470	29,902

The Record of Production

Production of Coke and Anthracite Pig Iron in the United States by Months Since Jan. 1, 1913—Gross Tons

	1913	1914	1915	1916	1917
Jan. ...	2,795,331	1,885,054	1,601,421	3,185,121	3,150,938
Feb. ...	2,586,337	1,888,670	1,674,771	3,087,212	2,645,247
Mar. ...	2,763,563	2,347,867	2,063,834	3,337,691	3,251,352
Apr. ...	2,752,761	2,269,655	2,116,494	3,227,768	3,334,960
May. ...	2,822,217	2,092,686	2,263,470	3,361,073	3,417,340
June. ...	2,628,565	1,917,783	2,380,827	3,211,588	3,270,055
July. ...	2,560,646	1,957,645	2,563,420	3,224,513	3,342,438
Aug. ...	2,545,763	1,995,261	2,779,647	3,203,713	3,247,947
Sept. ...	2,505,927	1,882,577	2,852,561	3,202,366	3,133,954
Oct. ...	2,546,261	1,778,186	3,125,491	3,508,849	3,303,038
Nov. ...	2,233,123	1,518,316	3,037,308	3,311,811	3,205,794
Dec. ...	1,983,607	1,515,752	3,203,322	3,178,651	2,882,918

Total.
yr*... 30,724,101 23,049,752 29,662,566 39,039,356 38,185,981

*These totals do not include charcoal pig iron. The 1917 production of this iron is estimated at 400,000 tons.

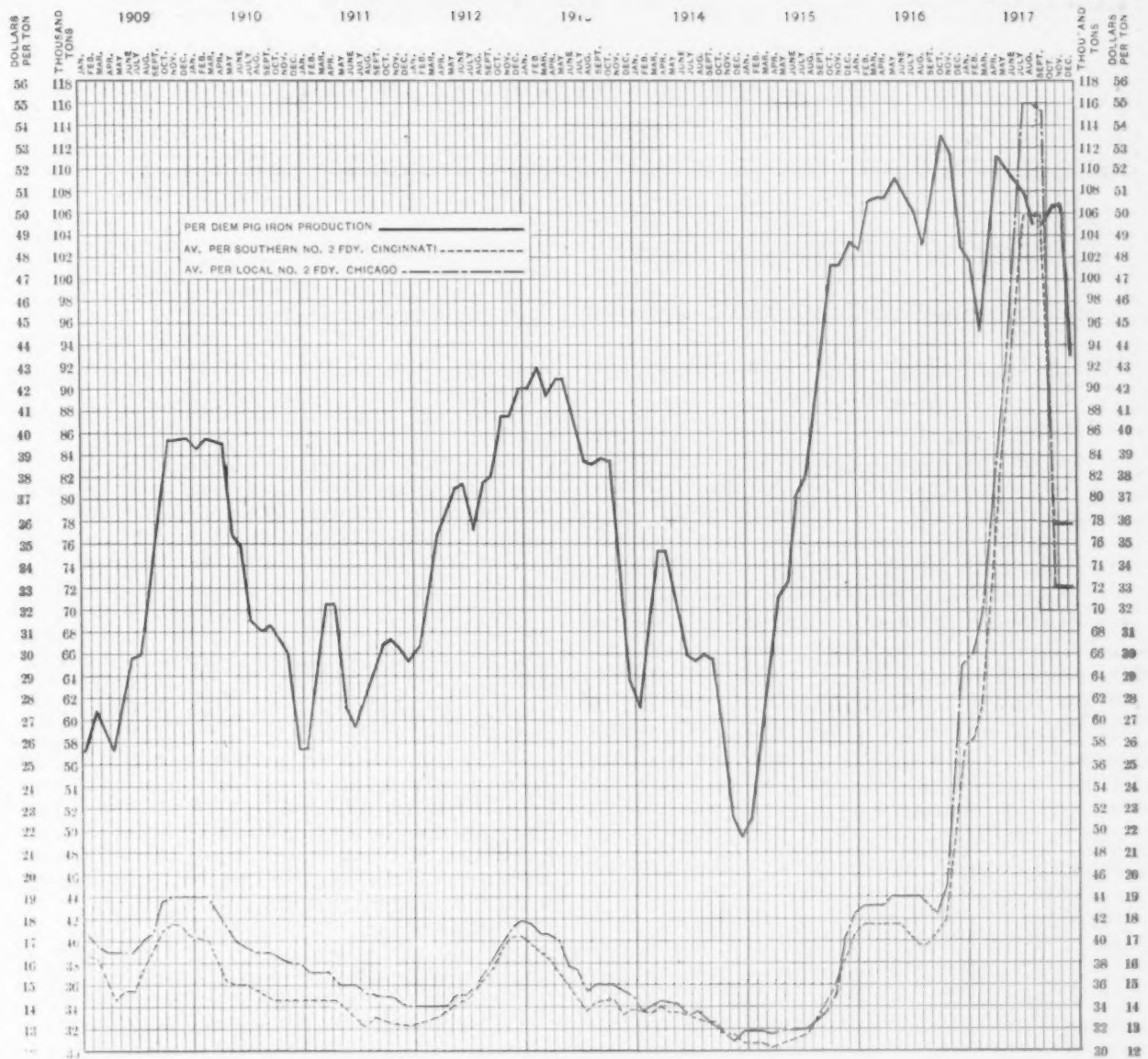


Diagram of Daily Average Production by Months of Coke and Anthracite Pig Iron in the United States from Jan. 1, 1908, to Jan. 1, 1918; Also of Monthly Average Prices of Southern No. 2 Foundry Iron at Cincinnati and Local No. 2 Foundry Iron at Chicago District Furnace

The figures for daily average production, beginning January, 1910, are as follows:

Daily Average Production of Coke and Anthracite Pig Iron in the United States by Months Since Jan. 1, 1910—
Gross Tons

	1910	1911	1912	1913	1914	1915	1916	1917
Jan.	84,148	56,752	66,384	90,172	60,808	51,659	102,746	101,643
Feb.	85,616	64,090	72,442	92,369	67,453	59,813	106,456	94,473
Mar.	84,459	70,036	77,591	89,147	75,738	66,575	107,667	104,882
Apr.	82,792	68,836	79,181	91,759	75,665	70,550	107,592	111,165
May	77,102	61,079	81,051	91,039	67,506	73,015	108,422	110,238
June	75,516	59,585	81,358	87,619	63,916	79,361	107,053	109,002
July	69,305	57,841	77,738	82,601	63,150	82,691	104,017	107,820
Aug.	67,963	62,150	81,046	82,057	64,363	89,666	103,346	104,772
Sept.	68,476	65,903	82,128	83,531	62,753	95,085	106,745	104,465
Oct.	67,520	67,811	86,722	82,133	57,361	100,822	113,189	106,550
Nov.	63,659	66,648	87,697	74,453	50,611	101,244	110,394	106,859
Dec.	57,349	65,912	89,766	63,987	48,896	103,333	102,537	92,997

Samuel Deutsch and Moise Dreyfus, who founded the Ohio Iron & Metal Co., Chicago, 33 years ago, retired from active business Dec. 31 and severed their connection with the company. S. A. Newman has been elected president and treasurer, L. J. Newman vice-president, and L. Robeck secretary of the company, with main offices, as before, at Chicago, in Suite 1134, First National Bank Building, and branch offices at Cleveland and at Montreal. The Cleveland office is in charge of B. L. Newman and the Montreal office in charge of J. M. Zehner.

A free evening class to train men as radio operators for the Signal Corps is soon to be started by the Stevens Institute of Technology, Hoboken, N. J. Prof. L. A. Hazeltine, head of the department of electrical engineering, will conduct the course.

Blast Furnace Notes

One of the blast furnaces of the Toledo Furnace Co. at Toledo, Ohio, was banked from Dec. 4 to Dec. 7, the company having received an order from the Federal Fuel Administrator at Washington to discontinue operating the furnace and to ship the coke made in its by-product ovens from Toledo to Detroit for domestic consumption.

E. J. Lavino & Co., Bullitt Building, Philadelphia, have purchased the blast furnace and mines of the Oriskany Ore & Iron Corporation, and are now the sole owners of this company. The furnace is located at Reusens, Va., and the mines at Pittsville, Va.

Marshall furnace of the Juniata Furnace & Foundry Co., Newport, Pa., which has been out of blast for some weeks for repairs, will blow in this week on ferromanganese.

The Sheridan furnace at Sheridan, Pa., has been out of blast for several weeks because of an accident which made relining necessary.

The Taft-Peirce Mfg. Co., Woonsocket, R. I., is exhibiting its line of gages, toolroom specialties, Martell reamers, and its latest product, the Simmonds magnetic chuck, at the New York and Chicago automobile shows.

The Nagle Steel Co., Reading, Pa., has commenced the installation of a new train of rolls and furnaces at its puddle mills at Seyfferts.

Iron and Steel Markets

OPERATION BREAKS DOWN

Transportation Conditions at Their Worst

Market Uncertainty Due to Government Proposals on Prices

The first week in the new year has brought blast-furnace and steel-works operation to the verge of complete demoralization. Western blizzards have made vastly worse what has been for weeks a serious situation, and embargoes on shipments have made conditions at rolling mills almost hopeless.

Scores of blast furnaces have been banked in the Pittsburgh, Youngstown, Wheeling, Cleveland and Chicago districts. Steel works in the same territories have been able to operate at but 50 to 75 per cent of capacity. The East, while spared fresh snow blockades, has had record low temperatures, and so little fuel has been delivered to steel plants that working schedules have gone to pieces. Never has the industry been so generally crippled or with so poor a prospect of any early return to normal conditions.

December pig-iron statistics show the sharp cutting down of production in the second half of the month, and the January showing will doubtless be worse. The total of coke and anthracite iron last month was 2,882,919 tons, or 92,997 tons a day, against 3,205,794 tons in November, or 106,859 tons a day. Capacity active Jan. 1 was only 93,500 tons a day, against 106,953 tons on Dec. 1, and only 321 furnaces were in blast Jan. 1, a loss of 24 in the month.

So far as the market is concerned, the relation of supply and demand growing out of the serious operating conditions is secondary to questions of Government price fixing. Reasoning that price changes will almost certainly be downward, buyers find no reason for contracting except that of getting a none too certain place on rolling-mill schedules, and sellers are not making haste to write contracts that are likely to be revised from without.

Among questions raised by buyers is this: If there are new prices April 1, will they apply to deliveries carried beyond that date, even though contracted to be made in the first quarter? An authoritative answer is that they will.

While Washington assurance is given that no price changes are contemplated that will reduce steel production by going below costs of small producers, there is an evident purpose to reduce prices obtained by integrated companies. By the Pomerene bill, or in some other way, a Government control is aimed at that will take over all output, but at different prices to different producers. The market price would then be an average and not at a level fixed by the costs of high-cost plants. In the face of such a proposal the steel trade has modified its first feeling of satisfaction with the recent official action on prices.

Lake Superior ore producers, who make sales for an entire year, are organizing a protest against

a possible revision of their 1918 contracts. Thus far, considerable reservations of ore have been made at Cleveland, but actual sales are deferred until prices can be definitely fixed.

Hundreds of thousands of tons of export steel are piled up at Eastern ports awaiting shipment, and large sales for export could be put through if bottoms could be had. In wire, a 50,000-ton inquiry has been up, but could not be entertained. The Government is seeking 50,000 tons of open-hearth re-rolling billets for shipment abroad. Iron and steel exports in November were but 474,000 tons, against 572,000 tons in October. November imports were but 15,000 tons, about the same as in October, but 28,000 tons less than in November, 1916.

The Canadian Pacific Railroad has inquired for 85,000 tons of 85-lb. rails. Quotations on this business have gone as high as \$70 for Bessemer and \$73 for open-hearth rails. A Canadian mill is the natural destination of this order, but there is a possibility of its division.

With rail, car and locomotive buying for the railroads now a matter of Government initiative, some orders for all three may be expected. Price fixing of rails is thus an early possibility. It appears that rail mill space is not thoroughly pre-empted for the next eight or nine months, though the larger systems covered for 1918 long ago.

The interesting thing in cars is that, forced to accept uniform designs for the sake of output, the railroads will realize no small saving in reduced inventories through interchangeability.

Any expectation of increased quantities of tank plate becoming available through rejections of plates failing to meet ship specifications will not likely be realized, as normally they are not exceptionally large, and slight modifications have meanwhile been made in requirements. The reduction of earlier estimates of cargo ships that can be built represents 500,000 to 750,000 tons of plates counted on as required for shipyards that could now go into cars and locomotives.

Pittsburgh

PITTSBURGH, Jan. 8 (*By Wire.*)

The whole pig iron and steel business and in fact all lines of business are now in the hands of the railroads, and the railroads are hampered by blizzards that have made the fuel situation in the Pittsburgh and Youngstown districts and wherever pig iron and steel are made about as bad as it could possibly get. It is certainly much worse now than it has been at any time since the shortage in coke started more than a year ago. It is safe to say that output of pig iron in the Pittsburgh and Valley districts is not above 75 per cent of normal capacity, and it may be less. At this writing the Carnegie Steel Co. has no less than 19 furnaces idle out of a total of 59. There are eight furnaces banked for lack of coke, seven are idle that have been repaired and could be started, if coke could be obtained, while four stacks are idle for repairs. The National Tube Co. has three out of five stacks banked at Lorain, Ohio, and one of the four McKeesport furnaces, all for lack of coke. Its Pennsylvania and Continental pipe mills in this city are both shut down for lack of coal, and its leading plant at McKeesport is running very

A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics

At date, one week, one month, and one year previous

For Early Delivery

Pig Iron, Per Gross Ton:	Jan. 9, 1918.	Dec. 31, 1917.	Dec. 12, 1917.	Jan. 10, 1917.
No. 2 X, Philadelphia...	\$34.25	\$34.25	\$34.25	\$30.00
No. 2, Valley furnace...	33.00	33.00	33.00	31.00
No. 2 Southern, Cin'ti...	35.90	35.90	35.90	25.90
No. 2, Birmingham, Ala.	33.00	33.00	33.00	23.00
No. 2, furnace, Chicago*	33.00	33.00	33.00	30.00
Basic, del'd, eastern Pa.	33.75	33.75	33.75	30.00
Basic, Valley furnace...	33.00	33.00	33.00	30.00
Bessemer, Pittsburgh...	37.25	37.25	37.25	35.95
Malleable Bess., Ch'go*	33.50	33.50	33.50	30.00
Gray forge, Pittsburgh...	32.75	32.75	32.75	29.95
L. S. charcoal, Chicago...	37.50	37.50	37.50	31.75

Billets, etc., Per Gross Ton:	Jan. 9, 1918.	Dec. 31, 1917.	Dec. 12, 1917.	Jan. 10, 1917.
Bess. rails, heavy, at mill	....	....	....	\$33.00
O.-h. rails, heavy, at mill	....	....	....	40.00
Bess. billets, Pittsburgh...	\$47.50	\$47.50	\$47.50	60.00
O.-h. billets, Pittsburgh...	47.50	47.50	47.50	60.00
O.-h. sheet bars, P'gh...	51.00	51.00	51.00	60.00
Forging billets, base, P'gh	60.00	60.00	60.00	80.00
O.-h. billets, Phila.	50.50	50.50	50.50	60.00
Wire rods, Pittsburgh...	57.00	57.00	57.00	75.00

Finished Iron and Steel,

Per Lb. to Large Buyers:	Cents.	Cents.	Cents.	Cents.
Iron bars, Philadelphia...	3.685	3.685	3.685	3.159
Iron bars, Pittsburgh...	3.50	3.50	3.50	3.25
Iron bars, Chicago.....	3.50	3.50	3.50	3.00
Steel bars, Pittsburgh...	2.90	2.90	2.90	3.00
Steel bars, New York...	3.095	3.095	3.095	3.169
Tank plates, Pittsburgh...	3.25	3.25	3.25	4.25
Tank plates, New York...	3.445	3.445	3.445	4.419
Beams, etc., Pittsburgh...	3.00	3.00	3.00	3.25
Beams, etc., New York...	3.195	3.195	3.195	3.419
Skelp, grooved steel, P'gh	2.90	2.90	2.90	2.85
Skelp, sheared steel, P'gh	3.25	3.25	3.25	3.00
Steel hoops, Pittsburgh...	3.50	3.50	3.50	2.45

*The average switching charge for delivery to foundries in the Chicago district is 50c. per ton.

Per Lb. to Large Buyers:	Jan. 9, 1918.	Dec. 31, 1917.	Dec. 12, 1917.	Jan. 10, 1917.
Sheets, black, No. 28, P'gh	5.00	5.00	5.00	4.50
Sheets, galv., No. 28, P'gh	6.25	6.25	6.25	6.25
Wire nails, Pittsburgh...	3.50	3.50	3.50	3.00
Cut nails, Pittsburgh...	4.00	4.00	4.50	2.95
Fence wire, base, P'gh...	3.25	3.25	3.25	2.95
Barb wire, galv., P'gh...	4.35	4.35	4.35	3.85

Old Material, Per Gross Ton:

Iron rails, Chicago.....	\$38.00	\$37.00	\$37.00	\$27.00
Iron rails, Philadelphia...	38.00	38.00	38.00	28.00
Carwheels, Chicago	30.00	30.00	31.00	19.00
Carwheels, Philadelphia...	30.00	30.00	34.00	22.00
Heavy steel scrap, P'gh...	30.00	30.00	30.00	23.00
Heavy steel scrap, Phila.	30.00	29.00	28.00	22.00
Heavy steel scrap, Ch'go	30.00	30.00	28.00	21.50
No. 1 cast, Pittsburgh...	30.00	30.00	29.00	20.00
No. 1 cast, Philadelphia...	30.00	30.00	31.00	20.00
No. 1 cast, Ch'go (net ton)	26.00	25.50	23.50	15.50
No. 1 RR. wrot, Phila...	35.00	35.00	35.00	27.00
No. 1 RR. wrot, Ch'go (net)	31.25	31.25	31.25	23.50

Coke, Connellsville, Per Net Ton at Oven:

Furnace coke, prompt...	\$6.00	\$6.00	\$6.00	\$8.50
Furnace coke, future...	6.00	6.00	6.00	5.00
Foundry coke, prompt...	7.00	7.00	7.00	10.00
Foundry coke, future...	7.00	7.00	7.00	6.50

Metals.

Per Lb. to Large Buyers:	Cents.	Cents.	Cents.	Cents.
Lake copper, New York...	23.50	23.50	23.50	27.75
Electrolytic copper, N. Y.	23.50	23.50	23.50	27.75
Spelter, St. Louis.....	7.62 1/2	7.62 1/2	7.50	9.25
Spelter, New York.....	7.87 1/2	7.87 1/2	7.75	9.50
Lead, St. Louis.....	6.55	6.35	6.37 1/2	7.32 1/2
Lead, New York.....	6.70	6.50	6.50	7.50
Tin, New York.....	85.00	85.50	86.00	42.50
Antimony (Asiatic), N.Y.	14.50	14.75	15.25	14.25
Tin plate, 100-lb. box, P'gh	\$7.75	\$7.75	\$7.75	\$7.00

light. This concern in December made only about 50 per cent of its normal output of tubular goods. The above is representative of conditions existing among nearly all furnace plants and steel works in this and the Valley districts. No relief is in sight, but the situation is likely to get much worse. When the operating committee composed of vice-presidents of the eastern railroads started in to work out the problem of relieving the railroad congestion here it was making good progress, but just at the time a good start had been made the Government took over the railroads and this general operating committee was dissolved. Subcommittees have been appointed to carry on the work of solving the transportation problem of the railroads East of the Mississippi River, but so far have not been able to do much on account of the blizzards that have raged here for about three weeks. The shortage in coal for operating the mills is about as bad as in coke, one leading plant in this city reporting to-day that it has only enough coal to last until Saturday next and will have to shut down unless it can get coal in, which is not likely. Last week blast furnace and steel operations in the Youngstown district were fairly good, but this week the coal and coke shortage has grown worse and it is likely that before the week ends some blast furnaces will have to bank and some of the steel works will be down to a 50 per cent operation. Railroads and Government officials are putting forth every effort possible to better the situation, but so far without result, and it is getting worse. Should the cold weather last for any length of time it would not be surprising if half or more of the blast furnaces in the Pittsburgh and Valley districts would have to bank. The shortage in pig iron is cutting down output of steel 25 per cent or more and will likely reduce it much further in the near future. All this is making a heavy increase in operating costs, which have mounted to figures never reached before. The amount of new business being placed in iron and steel products by general consumers is very light, new orders from the Government being for 75 per cent or more of all the new business being placed. Steel mills and other plants report that on account of

embargoes they cannot make shipments, and their products are piling up at a rate that means they will soon have to shut down unless cars are furnished. The Pennsylvania Railroad has had an embargo for several weeks on all Eastern shipments except coal and coke and food products, and it is not likely to be lifted for some time. There is no trouble in selling material at the full Government prices, but under present conditions mills are not anxious to sell, as they cannot make delivery on orders already booked and to take on more business makes their situation worse. The present condition in the steel business as regards lack of fuel and railroad facilities is without precedent, and the great trouble is no relief is in sight for the near future.

Pig Iron.—There is an insistent demand for pig iron, both from consumers and producers, and with practically none to be had. All the steel companies that have their own blast furnaces are very short of metal and are trying everywhere to buy it, but it is not to be had. Recently some of the leading blast furnace interests have held several meetings and discussed the problem of how to secure a better distribution of coke in order to permit a larger output of pig iron, if possible. One suggestion that all the coke produced be pooled did not meet with favor, as this would defeat the object that consumers are trying to attain. Another suggestion has met with favor. It is that a compilation be made showing average consumption of coke by a number of blast furnaces in the North and South, and that a certain coke consumption line be fixed, and any blast furnaces whose records show that their consumption of coke is larger than the amount that may be fixed as being consumed by modern furnaces, should at once blow out, allowing all the coke to go to blast furnaces that have modern practice and use a minimum amount of coke. Nothing definite has been done, but it is likely the problem of a better distribution of coke will be worked out in some way. Practically no pig iron is being sold, as it cannot be had, and the shortage in supply is getting more acute on account of so many furnaces being banked. There is some inquiry for pig iron

for second quarter, but furnaces refuse to sell that far ahead, not knowing what may be done by the Government with prices on pig iron when March 31 comes. Ore producers have taken up with consumers the matter of making contracts for ore for this year.

We quote as follows: Basic pig iron, \$33; Bessemer \$36.30; gray forge, \$32; No. 2 foundry, \$33; No. 3 foundry, \$32.50, and malleable Bessemer, \$33.50, all per gross ton at Valley furnace, the freight rate for delivery in the Cleveland and Pittsburgh districts being 95c. per ton.

Billets and Sheet Bars.—No new sales of billets or sheet bars are being made, as all the steel mills are running very short of steel themselves and are trying to buy rather than sell. The demands of the Government for open-hearth steel for war materials are steadily getting larger, and 75 per cent or more of the present reduced output of open-hearth steel of four or five of the largest makers is going out on Government orders. Steel prices are now uniform to all consumers, and will be as long as Government prices are in effect. Formerly some large users of sheet bars had a decided advantage over some of their competitors in the prices they were paying for steel, but this has been abolished. Output of steel in the Pittsburgh and Youngstown districts is not more than 75 per cent of capacity.

We quote 4 x 4 in. soft Bessemer and open-hearth billets at \$47.50, sheet bars \$51, forging ingots \$73, and forging billets \$60 base, all f.o.b. at mill, Pittsburgh or Youngstown.

Ferroalloys.—The new inquiry for ferroalloys of all kinds is quiet, consumers being covered over this quarter at least. Makers of ferroalloys, on which prices have been fixed, are not anxious to sell into second quarter, not knowing whether prices may be revised on March 31, or whether present prices will stand, the latter being likely. We note a sale of 300 tons of 80 per cent domestic ferromanganese, equal shipments over first quarter, at \$250 per gross ton, delivered; also a sale of 50 tons of spiegeleisen at about \$60, delivered. We quote 80 per cent domestic ferromanganese firm at \$250, delivered; 18 to 22 per cent spiegeleisen at \$60 to \$65, delivered, and 50 per cent ferrosilicon at \$165 to \$170 for prompt shipment.

We now quote 9 per cent Bessemer ferrosilicon at \$54. 10 per cent \$55, 11 per cent \$58.30, 12 per cent \$61.60. We quote 6 per cent silvery iron \$40, 7 per cent \$42, 8 per cent \$44.50, 9 per cent \$47, 10 per cent \$50. Three dollars per gross ton advance for each 1 per cent silicon for 11 per cent and over. All the above prices are f.o.b. maker's furnace, Jackson or New Straitsville, Ohio, these furnaces having a uniform freight rate of \$2 per gross ton, for delivery in the Pittsburgh district.

Structural Material.—New work coming up in this district is very light, building operations being almost at a standstill. To-day (Tuesday) bids were to be opened on the proposed new banking building of the Union Trust Co., this city, that, if placed, will require about 2500 tons of steel. However, it is not certain this job will be let, owing to the high prices of steel and labor and the difficulty in getting delivery of material. We quote beams and channels up to 15 in. at 3c. at mill, this being the Government price. The two local mills rolling structural steel are reported filled up for six months or longer.

Plates.—The available supply of plates of certain sizes for prompt shipment from some mills is said to be a little larger, but on standard sizes mills have very few to spare. Some few car orders are coming out, but they are small. The Pressed Steel Car Co. has taken 200 steel gondolas for the Republic Iron & Steel Co., 50 steel hoppers for the Michigan Alkali Co. and 300 steel underframes for the Louisville & Nashville Railroad. Local steel car builders say they have no personal knowledge that the United States Government is figuring on the purchase of 900 small capacity cars for shipment to Italy, and no inquiries have been received here. The two local steel car companies have only about 60 days' work ahead on steel cars, but both are turning out very large quantities of war material for the Government. We quote ¼-in. and heavier sheared plates at 3.25c. at mill, f.o.b. Pittsburgh.

Sheets.—The new demand for sheets is quiet, consumers being well covered ahead and mills not anxious to sell for delivery into second quarter on new orders, not knowing whether prices may be revised by the Government on March 31 or after. There is a great shortage in the supply of steel and concerns which

have both sheet and tin plate mills are diverting all the steel they can to the manufacture of tin plate, owing to the urgent demand for it for food containers. Some of the smaller mills that have been in the habit of buying black sheets and galvanizing them claim they cannot come out even at the 6.25c. price and are doing very little. The Government is still a heavy buyer of sheets, and a good part of the output of some mills is going out on direct or indirect Government orders. Prices on sheets are given in detail on page 167.

Tin Plate.—Unless the great shortage in supply of cars is soon relieved, some of the tin plate mills will have to shut down in the near future. Many thousands of boxes of tin plate are piled up in warehouse waiting for cars, and the embargo East on the Pennsylvania Railroad, which has been on for some time, has shut off shipments of tin plate, so that some mills have about reached the limit of warehouse facilities and the only thing to do is to close down. No action has yet been taken in regard to selling tin plate to jobbers, except where it can be shown that the material is wanted for Government work. As yet the Government has made no ruling on prices to be charged for tin plate by jobbers, but this may come soon. There is a fair amount of export inquiry, but it is almost impossible to get Government licenses for export shipments. The new demand for carload lots and also for stock items is fairly heavy. We quote tin plate in large and small lots at \$7.75 per base box at mill, rolled from Bessemer or open-hearth stock. Prices onterne plate are given on page 167.

Iron and Steel Bars.—Very heavy Government orders for shell steel rounds are being placed by the Government, and on one award made recently the Allegheny Steel Co., Brackenridge, Pa., took 15,000 tons. New buying in iron and steel bars is only fairly heavy, most consumers being covered through first quarter and some for first half of this year. Output is greatly restricted on account of the shortage in steel, and it is said that more bars are being rolled from Bessemer steel at present than for some years, owing to the heavy demand of the Government for the open-hearth output of the mills. We quote steel bars rolled from old steel rails at 3c. from steel billets 2.90c., and refined iron bars 3.50c., f.o.b. Pittsburgh.

Rods.—The domestic and export demand for rods is very heavy, and there is practically a famine in the supply. The local rod mills say they have all the business on their books they care to take at present and are not selling in the open market. Output of rods is greatly reduced because of the fact that some makers believe prices as fixed by the Government are lower than they should be, and they are diverting steel to other products on which the margin of profit is larger. We do not hear of any important sales of rods in this market recently. Prices on rods are given in detail on page 167.

Wire Products.—New sales of wire and wire nails are fairly heavy, those of the leading interest being placed at 4000 to 5000 tons per day. Domestic demand is fairly active, but none of the mills is selling wire or wire nails for delivery beyond March 31, owing to the uncertainty as to whether prices may be revised on that date. There is a heavy demand for wire nails and wire from the Orient, also from South America and Canada. Prices are given in detail on page 167.

Nuts and Bolts.—Fully 75 per cent or more of the new business being placed in nuts and bolts is on Government direct or indirect orders, the new demand from other users being quiet. Makers are not selling for delivery beyond March 31, and buyers are not anxious to contract very far ahead, as there is no incentive to do so under present Government restrictions on prices. Discounts are given on page 167.

Rivets.—Very heavy orders for rivets are being placed direct by the Government and also by shipbuilding concerns that are working on Government orders. New demand from other consumers is very quiet and has been for some time. We quote structural rivets at \$4.55 and cone head boiler rivets at \$4.75 per 100 lb. f.o.b. Pittsburgh.

Hoops and Bands.—The new demand is quiet, consumers being covered ahead for some time and mills hold up for first half of this year or longer. We quote steel bands at 2.90c., extras as per the steel bar card, and steel hoops at 3.50c., f.o.b. Pittsburgh.

Shafting.—The Government continues to be a very heavy buyer of shafting for use in making war materials, and concerns having Government orders for motor trucks and other vehicles for war purposes are buying very freely. The demand from builders of pleasure cars is quiet, and the screw stock machine trade is also dull. We quote cold rolled shafting in large or small lots at 17 per cent off list f.o.b. Pittsburgh.

Cold Rolled Strip Steel.—Makers report the Government demand fairly active, but from the domestic trade it is light. Makers are not selling for delivery beyond March 31, and consumers are not anxious to buy beyond that delivery owing to a possible revision of prices on April 1 or shortly after.

We quote cold-rolled strip steel at \$6.50 per 100 lb., f.o.b. Pittsburgh, terms 30 days, less 2 per cent for cash in 10 days, when sold in quantities of 300 lb. or more.

Hot Rolled Strip Steel.—Makers report the demand only fairly active and are not selling for delivery beyond March 31. We quote at \$4.50 per 100 lb. f.o.b. Pittsburgh.

Wrought Pipe.—Owing to shortage in supply of steel, output of iron and steel pipe and other tubular goods is very much restricted. It is stated that the output of the National Tube Co. in December of tubular goods was only a little more than 50 per cent of capacity, and it may not be any larger this month. The new demand for merchant iron and steel pipe is only fair, and for butt-weld sizes, used for building purposes, is dull. Mills rolling iron and steel pipe report their output well sold up over first half of this year or longer. Discounts on iron and steel pipe are given on page 167.

Boiler Tubes.—The Government is still a very heavy buyer of iron and steel boiler tubes, and makers have their output sold up for six months or longer, while one leading maker is sold up for all of this year and on seamless steel tubing for a longer period. Discounts, as fixed by the Government, are given on page 167.

Coke.—General conditions in the coke trade do not show much betterment. Last week the supply of cars on some days was fairly good, but on several days ran as low as 25 and 30 per cent. The recent drastic orders of the United States Fuel Administration indicate strongly that the United States Fuel Administration intends to work very closely with the Government in its recent action in taking over the railroads of the country. Consumers of coal and coke say that no matter what may be done by the Fuel Administration, conditions as regards supply of coal and coke cannot be any worse than they have been in the past year or more. It is said that all present contracts for coke expire on June 30 next, and very soon after that date the Fuel Administration may be in full charge of the important coke industry. There is a heavy demand for furnace coke for prompt shipment, but the supply is very small. The labor supply in the coke regions is fairly good, but with the great scarcity in cars, operators cannot ship their coke promptly, and often have to shut down plants, waiting for cars in which to ship coke already made. The outlook for a larger supply of free coke in the near future is not very bright. No new contracts are being made, as there is no incentive to do so. We quote blast furnace coke at \$6, foundry \$7, and crushed coke from 1-in. size at \$7.30, all in net tons at oven. The Connellsville *Courier* gives the output of coke in the Upper and Lower Connellsville regions for the week ending Dec. 29 as 251,398 tons, a decrease over the previous week of 39,976 tons. This large falling off in output was on account of holidays.

Old Material.—The local scrap trade is quickly getting its bearings after the recent important rulings on scrap made by the Committee on Steel and Steel Products of the American Iron and Steel Institute. The commission of 3½ per cent allowed to dealers is fairly

satisfactory to the latter, and they claim that most of the large scrap consumers will be very willing to pay this commission, in order to be relieved of the trouble of finding scrap and trying to get cars in which to ship it. In fact, several of the leading consumers have said that they will send their inquiries to responsible dealers and allow them to find scrap for them. The car situation is no better and some shipments of scrap to users in the Pittsburgh district have been on the road for more than a month and not yet delivered. There is a heavy demand for all grades of scrap, much more than the supply, and some consumers are running very short. We note sales of 3000 tons of heavy steel scrap at \$30, 1000 tons of turnings at \$20, and 1000 tons of low phosphorus scrap at \$40, delivered to consumers' mills in the Pittsburgh district. All these sales were made by dealers, to whom the regular commission of 3½ per cent on the delivered prices was paid. No scrap is being sold at less than the regular Government prices, and, in fact, higher prices would gladly be paid by consumers if it were permissible to do so. These Government prices for delivery in the Pittsburgh district and other consuming points that take Pittsburgh freights are as follows:

Heavy steel melting scrap, Steubenville, Folsom, Brackenridge, Monessen, Midland and Pittsburgh, delivered	\$30.00
No. 1 foundry cast	30.00
Rerolling rails, Newark and Cambridge, Ohio, Cumberland Md., Franklin, Pa., and Pittsburgh	35.00
Hydraulic compressed sheet scrap	\$26.00 to 27.00
Bundled sheet scrap, sides and ends, f.o.b. consumers' mill, Pittsburgh district	24.00 to 25.00
Bundled sheet stamping scrap	22.00 to 23.00
No. 1 railroad malleable stock	30.00
Railroad grate bars	19.00 to 20.00
Low phosphorus melting stock	40.00
Iron car axles	47.50
Steel car axles	47.50
Locomotive axles, steel	47.50
No. 1 busheling scrap	35.00
Machine shop turnings	20.00
Cast iron wheels	30.00
Rolled steel wheels	30.00
*Sheet bar crop ends	39.00 to 40.00
Cast iron borings	20.00
No. 1 railroad wrought scrap	35.00
Heavy steel axle turnings	25.00 to 26.00
Heavy breakable cast scrap	30.00

*Shipping point.

The H. Koppers Co., Frick Arcade Building, Pittsburgh, has received a contract from the Providence Gas Co. for the erection at Providence, R. I., of a battery of 40 Koppers gas ovens for the manufacture of illuminating gas and of metallurgical and domestic coke. John R. Freeman, president of the Providence Gas Co. and one of the most prominent engineers in the United States, made a detailed study and inspection of all the different types of coal gas plants in the country before making his decision to discontinue the making of gas by means of vertical retorts and to adopt the Koppers gas oven. The novel feature of the installation will be the heating of the ovens by means of producer gas manufactured in an outside plant of mechanically operated producers, using coal as fuel.

Chicago

CHICAGO, Jan. 7.

A record breaking snowfall of over 13 inches which was blown into huge drifts by a 40-mile gale paralyzed railroad operations in and near Chicago yesterday and to-day with disastrous consequences for several blast furnaces at the foot of Lake Michigan. Five furnaces of the Illinois Steel Co. were banked at South Chicago and five at Gary, all for lack of fuel. At Joliet only one furnace is operating and the mill has been shut down. It is hoped that the South Chicago and Gary furnaces will be able to resume to-morrow. At the plant of the Wisconsin Steel Co., South Chicago, where one furnace was out, another was banked Saturday afternoon, leaving but one in operation, while one bar mill was shut down, leaving two operating. The plant of the Inland Steel Co., Indiana Harbor, Ind., was less affected, although operations were hampered and there were one or two minor accidents. Merchant furnaces expect de-

lays until the railroads complete their big job of digging themselves out. Railroad and interurban passenger traffic was demoralized to-day. In new business the week has been a quiet one. Government business overshadows all else, although no new allotments of notable size are reported. One inquiry from a Western munitions maker calls for 2000 tons of forging bars. Another large Government inquiry for bolts and nuts is out. An Eastern mill has experienced trouble because Government shipments on Class A-1 priority certificates have been sidetracked.

Pig Iron.—The market is quiet because producers have but little to sell and for the additional reason that they are not anxious to write contracts containing a clause that prices are subject to revision at the end of the first quarter. It is conceded that if iron were offered, it would be quickly taken. The Northern producers are practically sold up for the first half. The most of the Southern furnaces are out of the market. One large Southern maker continues a seller with a normal range of silicons to offer. Of malleable Bessemer and the silvery irons there is a pronounced scarcity, but it is not reported that melters have had to cease or curtail operations because of a lack of iron. Shipments are poor because of inadequate railroad facilities and production will fall off in the next few days because of the heavy fall of snow at the southern end of Lake Michigan which for a time completely paralyzed the railroads. Sellers are concerning themselves with possibilities which may develop from the Government requirement that contracts extending beyond the first quarter shall contain the revision clause, one question raised being the price which will apply if iron which should be delivered in the first quarter is carried over into the second, the Government meanwhile having reduced the price for second quarter. Uncertainty also exists as to the fate of contracts made at the present level which will extend beyond March 31. Prices are unchanged at the maximum Government levels. The following quotations are for iron delivered at consumers' yards, except those for Northern foundry, malleable Bessemer and basic irons, which are f.o.b. furnace, and do not include a switching charge averaging 50c. per ton:

Lake Superior charcoal, Nos. 2 to 5.....	\$37.50
Lake Superior charcoal, No. 6 and Scotch....	40.00
Northern coke foundry, No. 1.....	33.50
Northern coke foundry, No. 2.....	33.00
Northern coke foundry, No. 3.....	32.50
Northern high-phosphorus foundry.....	33.00
Southern coke No. 1 foundry and 1 soft.....	38.50
Southern coke No. 2 foundry.....	37.00
Malleable Bessemer.....	33.50
Basic.....	33.00
Low-phosphorus (copper free).....	53.00
Silvery 7 per cent.....	44.54

Ferroalloys.—Though the market is quiet, the price of 80 per cent ferromanganese is stronger, the minimum now being \$250.

Plates.—An Ohio producer, through its agency here, is offering plates of tank quality in a limited way all under 72 in. in width. All wide plates are going into Government work. The leading independent is out of the market in plates and the principal producer has none to sell, but is taking care of its regular customers under contract. An Eastern maker has taken a few orders after submission to the mill. Wherever sales have been made, the Government price of 3.25c. has applied. Car business is more active. The Baltimore & Ohio is inquiring for 3000 cars equally divided into hoppers, flats and gondolas. The Atlantic Coast Line is inquiring for 1000 box cars, and still pending is the Illinois Central inquiry for 1000 gondolas. Jobbers continue to quote 4.45c. for material out of stock.

Structural Material.—Building construction involving shapes is flat, the only letting reported is a steel tipple taking 201 tons for the Kathleen mine of the Union Colliery Co. at Duquoin, Ill. An Eastern mill reports that the situation in shapes is getting a little easier, although it is not taking much business. The leading interest is taking a little at the Government price of 3c. The leading independent is out of the market on shapes. For material out of warehouse, jobbers quote 4.20c.

Bars.—Nearly all interests are taking business in a

restricted way for mild steel bars at the Government price of 2.90c. for first quarter delivery. Rail carbon steel, which is quoted at 3c. plus the recently announced extras, is quiet. Although there is considerable inquiry for future delivery, the makers of hard steel bars and shapes are reluctant to make contracts with the price revision clause required by the Government. The call for concrete reinforcing bars is not heavy and the agricultural implement makers are covered. Bar iron is quoted at the official price of 3.50c., Chicago. Warehouse prices are unchanged, as follows:

Soft steel bars, 4.10c.; bar iron, 4.10c.; reinforcing bars, 4.10c.; base, with 5c. extra for twisting sizes $\frac{1}{2}$ in. and over and usual card extras for smaller sizes; shafting, list plus 10 per cent.

Wire Products.—The week has been a quiet one. Present severe weather conditions are likely to be reflected in lessened production. Quotations are unchanged, as follows:

Nails, \$3.50, Pittsburgh; plain fence wire, \$3.25; painted barb wire, \$3.65; galvanized barb wire, \$4.35; polished staples, \$3.65, and galvanized staples, \$4.35.

Cast Iron Pipe.—Bay City, Mich., will take bids Jan. 18 on about 250 tons. Madison, Wis., placed about 200 tons with the Central Foundry Co., which will supply universal pipe. Prices are without change and subject to concession where competition is keen. The pipe shops are running hand to mouth.

Quotations per net ton, Chicago, are as follows: Water pipe, 4-in., \$57.30; 6-in. and larger, \$54.30, with \$1 extra for Class A water pipe and gas pipe.

Sheets.—A Middle Western producer through its Chicago agent is offering limited quantities of black, blue and galvanized sheets at the Government prices. The leading local independent maker is practically out of the market on blue annealed for the first quarter and entirely so on black and galvanized. Government requirements coming to the mill indirectly make a considerable tonnage. All transactions are at the agreed prices, as follows: No. 28 black, 5c.; No. 10 blue annealed, 4.25c. and No. 28 galvanized, 6.25c., all Pittsburgh. Warehouse prices are without change.

We quote for Chicago delivery out of stock, regardless of quantity, as follows: No. 10 blue annealed, 5.45c.; No. 28 black, 6.45c., and No. 28 galvanized, 7.70c.

Bolts and Nuts.—On the part of the Government there is renewed activity, another large inquiry being before the trade. Domestic buying is quieter, but the falling off is more than offset by Government demands. The railroads are buying well and after the inventory period is past it is expected that private consumers will enter the market. The new uniformity in prices is pleasing to the trade in general. For prices see finished iron and steel f.o.b. Pittsburgh. Store prices have reverted to their old basis as follows:

Store prices are as follows: Structural rivets, 5.50c.; boiler rivets, 5.60c.; machine bolts up to $\frac{3}{4}$ x 4 in., 40 and 10 per cent off; larger sizes, 35 and 5 off; carriage bolts up to $\frac{3}{4}$ x 6 in., 40 and 2 $\frac{1}{2}$ off; larger sizes, 30 and 5 off; hot pressed nuts, square tapped, \$1.05 off, and hexagon tapped, 85c. off per 100 lb.; coach or lag screws, gimlet points, square heads, 50 per cent off.

Old Material.—A wide divergence of opinion exists as to the values of various grades of scrap, part of which is due to a lack of general acceptance on the part of dealers of the recently announced recommendations as to prices. By some it is stated that the recommendations have not been officially approved or promulgated, but others who are peculiarly in a position to know assert that there must be conformance to the recommendations and that they themselves would not dare to do other than conform to them. Some difference exists, however, in the interpretations placed on certain paragraphs of the recommendations by those who declare a willingness to abide by them. The mills which consume scrap will constitute the factor which adjudicates most of these questions and all the mills regard the recommendations favorably with the exception of those rolling iron bars, which do not like the fixing of a maximum for busheling scrap at \$35. In cases where prices have reached the Government maximum, the allowed commission of 3 $\frac{1}{2}$ per cent has been paid

to dealers in some instances. Not much buying has been done by consumers in the past week, but scrap is scarce and the market is strong. A rather extensive revision of prices is necessary. We quote for delivery buyer's works, Chicago and vicinity, all freight and transfer charges paid, as follows:

Per Gross Ton	
Old iron rails.....	\$38.00 to \$39.00
Relaying rails	60.00
Old carwheels	30.00
Old steel rails, rerolling.....	35.00
Old steel rails, less than 18 in.....	33.00
Heavy melting steel scrap.....	30.00
Frogs, switches and guards, cut apart.....	80.00
Shoveling steel	29.00 to 30.00
Steel axle turnings	24.00 to 25.00

Per Net Ton	
Iron angles and splice bars.....	\$37.00 to \$38.00
Iron arch bars and transoms.....	39.00 to 40.00
Steel angle bars	29.00 to 30.00
Iron car axles	47.00 to 48.00
Steel car axles	42.42
No. 1 railroad wrought	31.25
No. 2 railroad wrought.....	30.50 to 31.00
Cut forge	30.50 to 31.00
Pipes and flues	24.00 to 24.50
No. 1 busheling	26.00 to 27.00
No. 2 busheling	18.00 to 19.00
Steel knuckles and couplers	33.50 to 34.50
Coil springs	37.00
No. 1 boilers, cut to sheets and rings.....	22.00 to 23.00
Boiler punchings	31.00 to 32.00
Locomotive tires, smooth.....	36.50 to 37.50
Machine-shop turnings	17.00 to 17.50
Cast borings	16.50 to 17.00
No. 1 cast scrap	26.00 to 26.75
Stove plate and light cast scrap.....	21.00 to 22.00
Grate bars	21.00 to 22.00
Brake shoes	23.00 to 24.00
Railroad malleable	26.80
Agricultural malleable	25.00 to 26.00
Country mixed scrap.....	21.50 to 22.50

Cleveland

CLEVELAND, Jan. 8 (By Wire).

Iron Ore.—A meeting of representatives of ore interests was held in Cleveland Jan. 5 to consider the price situation for the coming season. The general sentiment appeared to be against making sales until prices are definitely fixed instead of being left subject to revision by the Government April 1. Operators of the smaller underground properties expressed themselves in favor of higher prices because of increased mining costs. It was decided to get together data on mining costs which will probably be used in presenting the matter to the Government. Without waiting for definite action on prices, sellers will go ahead and take reservations. Consumers are coming into the market for their ore requirements and considerable tonnage has been reserved during the week. It is expected that a large tonnage will be booked on reservations this month. We quote present prices as follows: Old range Bessemer, \$5.95; old range non-Bessemer, \$5.20; Mesaba Bessemer, \$5.70; Mesaba non-Bessemer, \$5.05.

Pig Iron.—Inquiries continue to come out in good volume, but a great deal of the first half demand for all grades of iron, particularly for steel making iron, is not being satisfied. There is an increase in inquiries for the last half, for which delivery some of the producers are taking contracts for foundry and malleable iron. However, others are showing less inclination to book orders in view of the action in making prices subject to revision April 1. The various contracts made before the proclamation of Dec. 28 are not subject to price revision, but with such a clause required in new contracts sellers say there will be no incentive to take on business. There is some inquiry for silvery iron, but it is very scarce, as most producers are now making ferrosilicon. We quote, f.o.b. Cleveland:

Bessemer	\$37.25
Basic	33.30
Northern No. 2 foundry.....	33.30
Southern No. 2 foundry.....	37.00
Gray forge	32.30
Ohio silvery, 8 per cent silicon.....	46.12
Standard low phosphorus, Valley furnace.....	50.00

Finished Iron and Steel.—There is good demand for steel in lots of 300 tons and under for Government work, but little inquiry for material for general uses. Some contracts are being taken for the first quarter. While the demand for ship and boiler plates is very heavy, the call for narrow plates in light gages is only moderate and mills making these sizes are offering prompt shipment. Price quotations higher than the

Government price on light plates, which have been made by a Cleveland mill, have practically disappeared. Boiler makers are having trouble in getting plates and tank shops are experiencing the same difficulty with some sizes. Specifications for a heavy tonnage of plates were distributed to various mills during the week by the American Shipbuilding Co. for boats recently ordered by the Government. An order for 2600 tons of plates and shapes was placed by the McMyler Interstate Co. for a Government crane. There has been a general extension of contracts in the automobile field where consumers had considerable amounts unspecified Jan. 1. The railroad situation is so bad that at least one mill that is in a position to sell steel for domestic commercial uses is not taking orders owing to its inability to make shipments. The demand for black and blue annealed sheets continues good. There is considerable inquiry for sheet contracts for the second quarter, but independent mills are declining to quote for that delivery. We quote warehouse prices as follows: Steel bars, 4.03½c.; plates, 4.38½c.; structural material, 4.13½c.; No. 10 blue annealed sheets, 5.35c.; No. 28 black sheets, 6.35c.; No. 28 galvanized sheets, 7.60c.

Coke.—The railroad situation in respect to deliveries on blast furnace coke has been as bad during the past few days as at any time recently and a number of furnaces have been compelled to bank. Three Cleveland furnaces of the American Steel & Wire Co. and Dover furnace of M. A. Hanna & Co. are banked, and Perry furnace in Erie was banked several days last week. There is still a great deal of inquiry for foundry coke for both prompt shipment and contract, but Cleveland brokers are compelled to turn down all inquiries, as they have no coke to offer.

Bolts, Nuts and Rivets.—The Quartermaster's Department of the Army has an inquiry out for 50,000,000 carriage, machine and truck bolts, and a number of comparatively small inquiries are pending from various other Government departments. Other inquiry is light. New inquiry for rivets is not active, but specifications on contracts from shipbuilders and other consumers are very heavy. We quote rivets at 4.65c. at Pittsburgh, for structural, and 4.75c. for boiler rivets.

Old Material.—The market is very firm. Dealers are making few sales and little scrap is being offered by producers. Shipments seem worse than they have been and some mills are reported to be badly in need of material. Busheling is at a standstill because mills refuse to pay the high maximum price, \$35 per gross ton, named by the Government. Dealers generally claim that producers are holding for the top price and that they are unable to make sales cheaper. However, some busheling has been offered at \$2 to \$3 per ton under the Government price. Mills in the Chicago territory are reported to be able to buy at considerably lower than the \$35 price. Other prices have been marked up to the Government price and sales of cast scrap and low phosphorus melting stock are reported at the Government maximum price. Dealers are showing an anxiety over the action of the Government in providing for a possible price revision April 1. They say that if they take contracts at the present prices and are unable to make deliveries before April 1, prices may be reduced and they will suffer losses. We quote f.o.b. Cleveland, as follows:

Per Gross Ton	
Steel rails	\$27.00 to \$28.00
Steel rails, rerolling.....	35.00
Steel rails, under 3 ft.....	34.50 to 35.50
Iron rails	35.00
Iron car axles.....	45.00 to 46.00
Steel car axles.....	45.00 to 46.00
Heavy melting steel.....	30.00
Cast borings	20.00
Iron and steel turnings.....	20.00
No. 1 railroad wrought.....	35.00
Hydraulic compressed steel scrap.....	26.50 to 27.50
Carwheels	30.00
Relaying rails, 50 lb. and over.....	50.00 to 60.00
Agricultural malleable	24.00 to 25.00
Railroad malleable	30.00
Steel axle turnings	23.00 to 24.00
Light bundled sheet scrap.....	24.00 to 24.50
No. 1 cast.....	30.00

Per Net Ton	
No. 1 busheling (nominally).....	\$25.00 to \$26.00
Railroad grate bars.....	19.00 to 19.50
Stove plate	19.00 to 19.50

Cincinnati

CINCINNATI, Jan. 8 (By Wire.)

Some last half foundry iron is to be had from Southern producers, but the tonnage is limited. Contracting for that period is held up because both seller and buyer are in the dark as to what last half prices will be. The Government's action in extending the present price schedule to April 1 has not relieved the situation. On the other hand, melters are slow in contracting for iron that can be obtained for that delivery. Any contracts made now are subject to revision to conform with any future Government schedule this year after April 1. But a few sellers seem disposed to insert a further proviso that if the price fixed is below production costs, the producer is to be allowed to abrogate the contract. This has been asked in only a few cases, and so far no contracts have been made on the basis mentioned, the consumer apparently being willing to take his chances for a future supply. The scramble for basic and malleable is by no means over, but the limited amount in sight is so small that there hardly seems to be any chance for enough iron to fill the requirements even of consumers who have urgent war contracts. A little foundry iron has been sold for first quarter shipment from the South. Virginia furnaces also again opened their books last week to dispose of some small tonnages of special foundry iron, but to-day no business will be accepted by these producers. The shipping problem is as hard to solve as before, with only faint indications that the new Government traffic regulations will work out any immediate relief. Based on freight rates of \$2.90 Birmingham and \$1.26 from Ironton, we quote f.o.b. Cincinnati as follows:

Southern coke, No. 2 foundry and 2 soft.....	\$35.90
Southern Ohio coke, No. 2.....	34.26
Basic, Northern	34.26

Finished Material.—The holiday lull has been succeeded by a little more active period. It is almost impossible to get shipments from the mills, so that the jobbers are drawing on their stocks to supply the immediate demand, which is confined mostly to steel bars, small structural shapes and sheets. It is impossible to get tin plate from any jobber here, and an urgent inquiry from a nearby manufacturer had to be turned down. The fact that this inquiry was sent to the jobbers shows that the mills are unable to make shipment of the material wanted. The store price on wire nails is \$4.10 per keg base, and the retail hardware merchants are now arranging their list of requirements for the next few months. None of them is inclined to buy very far ahead and only care to cover for first quarter requirements. The nearby mills quote No. 28 black sheets at 5.18½c., and No. 28 galvanized sheets at 6.43½c., f.o.b. cars Cincinnati or Newport, Ky. Store prices are as follows: Iron and steel bars, 4.08½c.; twisted bars, ¾ x 1¼-in., 4.23½c.; ¾-in., 4.33½c.; ½-in., 4.43½c.; ¾-in., 4.63½c., and ¼-in., 4.88½c. Structural shapes are 4.18½c.; plates ¾-in. and heavier, 4.43½c.; No. 10 blue annealed sheets, 5.43½c. Cold rolled shafting carries a 10 per cent discount from list.

Coke.—Reports from all sources are only repetitions of complaints from consumers who are running short. The blast furnaces in southern Ohio have been operating for some time on a hand-to-mouth basis with the necessity of banking from time to time, and if the present cold weather keeps up a few of them will face the necessity of shutting down for an indefinite period. The foundries are not in much better shape, although a careful canvass of the larger foundries in this vicinity shows that they have accumulated enough coke to carry them over the next two or three weeks. The car supply in the Connellsville district is said to have shown some improvement, but even after the coke was loaded and billed out it has been lost en route, so that it is only a gambling chance that the fuel will get through in time to relieve the situation. Considerable complaint is still made that the coke shipped now from nearly all districts is higher in sulphur than it should be, but the oven operators claim that the fault lies in the low grade of coal furnished them.

Old Material.—Changes in prices have not yet taken

effect because it is impossible to make shipments to any outside point without priority orders. These are difficult to obtain. However, as much scrap is being shipped out as can be shipped in, so that yard stocks remain about the same. Although advances are made on a number of grades of scrap, little has been sold at the figures given, due to the difficulty mentioned of forwarding the material. The following are dealers' prices, f.o.b. cars southern Ohio and Cincinnati:

Per Gross Ton

Bundled sheet scrap	\$19.00
Old iron rails	\$32.00 to 32.50
Relaying rails, 50 lb. and up.....	44.00 to 44.50
Rerolling steel rails	33.00 to 33.50
Heavy melting steel scrap.....	27.00
Steel rails for melting	27.00 to 27.50
Old carwheels	28.00

Per Net Ton

No. 1 railroad wrought	\$29.00 to \$29.50
Cast borings	13.00 to 13.50
Steel turnings	13.00 to 13.50
Railroad cast	24.50 to 25.00
No. 1 machinery	25.00 to 25.50
Burnt scrap	15.00 to 15.50
Iron axles	40.00 to 40.50
Locomotive tires (smooth inside)....	33.50 to 34.00
Pipes and flues	19.00 to 19.50
Malleable cast	23.50 to 24.00
Railroad tank and sheet.....	17.00 to 17.50

Philadelphia

PHILADELPHIA, Jan. 8.

Government control of railroads has brought no improvement as yet in the fuel shortage among eastern Pennsylvania steel mills and blast furnaces. On the contrary, the working out of the methods for relieving existing freight congestion has brought even greater hardships, for not only are the mills and furnaces hampered by lack of coal and coke, but they can not ship the iron and steel they produce, a sweeping general embargo now being effective on the Pennsylvania Railroad, which has checked all outbound traffic since last Friday. Almost without exception, steel mills are operating under great difficulties and at reduced capacity. The Bethlehem Steel Co. is suffering from coke shortage. The Midvale Steel & Ordnance Co. is short of both coal and coke, and on Monday four of its finishing mills were shut down. The Alan Wood Iron & Steel Co. began operations last week after a week's shut down, but is working at less than 60 per cent capacity owing to coke shortage for its blast furnaces. The Lukens Steel Co. had only four of its open-hearth furnaces operating Monday and is suffering from a shortage of pig iron, due to the inability of the furnace from which it buys iron to obtain coke. The Eastern Steel Co.'s finishing mills have been closed down for several days. The Central Iron & Steel Co. at Harrisburg was on the verge of shutting down the first of this week. The saw plant of Henry Disston & Sons, Inc., at Tacony, is shut down because of lack of coal. A number of blast furnaces are banked for lack of coke and others may go out of blast this week. Shippers are hopeful that the Director General of Railroads will bring order out of present chaos in rail transportation, but it is freely admitted that improvement of a permanent nature cannot be expected short of 30 or 60 days. Russian locomotives, which were turned over to railroads radiating from Philadelphia, have not proved effective in relieving the shortage of motive power, as their fire boxes were found to be too small to provide sufficient steam to haul the heavy loads on American railroads, and practically all of them have been sent to repair shops for reconstruction. Business in pig iron and steel for forward delivery is almost entirely suspended as a result of the Government dictum that contracts for delivery after April 1 are subject to price revision. If the object of the Government was to check forward selling, as is suggested in many quarters, it has certainly succeeded, for the opinion of iron and steel men is that no sales of importance will be made for delivery beyond March 31 with conditions so uncertain as to revision of fixed prices. Although expecting no drastic reductions, producers are not willing to commit themselves to make deliveries. There will continue to be the fear that a radical element in Washington may succeed in revising prices to a basis so low that iron and steel could not be produced at a profit.

Pig Iron.—The market is in a state of resignation. Consumers are seemingly resigned to the fact that there will not be enough available pig iron during the first half of the year to satisfy all requirements, while furnace representatives are becoming resigned to a situation which is beyond their control, and the relief for which must come from the Government. The latest manifestation of Government price regulation, namely the price revision provision, has very effectively put a stop to all forward selling of iron in this market. Many inquiries for iron for second half delivery have been turned down in the past week on the ground that furnaces cannot afford to commit themselves on such a basis. If the Government advanced the price of iron, the furnaces would probably not receive the benefit of such an advance, but if the price were lowered, it might go to a basis that would not yield a profit, and the furnaces apparently do not intend to be caught with orders of that kind on their books. Consumers who insist upon their wants for the latter part of the year being taken care of are told that a memorandum of their needs will be placed on file and when the iron producers are told the prices at which they can sell for the period following March 31, the orders will be definitely booked. One seller in this market announces that he will accept contracts for forward delivery with a clause stipulating that, if the Government reduces the price of pig iron to a basis too low for the furnace to make at a profit, he (the seller) will have the right of cancelling the contract. The attitude of furnace representatives generally is that, from their point of view, nothing is to be gained by selling now for delivery after March 31. As there is practically no iron available for first quarter, the market will undoubtedly be dead until the Government makes some further price announcement. The action of the Government is construed as an attempt to check forward selling of iron, and it will undoubtedly be successful. The Washington authorities are said to believe that more free iron should be available for urgent war work, but even under this new restraint upon selling there will be very little free iron before the third quarter of the year. Attention will now be centered on possible price revision. There is unquestionably a disposition on the part of some officials in Washington to revise prices downward. Owners of merchant furnaces feel that they have not been sufficiently represented in the price negotiations, and henceforth they will present their side of the case through the medium of the Associated Manufacturers of Merchant Pig Iron, Penton Building, Cleveland. It is predicted that there will be a further attempt to fix the prices for pig iron by districts, which, if successful, means that Southern iron would be subjected to a revision downward at least \$5 a ton below that of Northern iron. An agitation toward this change has already been started, and the argument is advanced that Southern iron can be produced more cheaply than Northern iron. Coke shortage is still seriously retarding iron production. The Brooke furnace is banked and a Wharton furnace will bank this week. Nearly all of the steel mills have one or more furnaces out of blast at least a day or two a week. The most important iron transaction of the past week was the sale of 3000 tons of Bessemer iron at \$36.30, furnace, to the Pencoyd works of the American Bridge Co. This company took Bessemer iron in lieu of basic, which was not obtainable in the quantities desired. There is a considerable demand for high silicon and high manganese irons. We quote standard grades of iron at furnace, except Virginia iron, for which the delivered price is quoted:

Eastern Pennsylvania No. IX.....	\$34.50
Eastern Pennsylvania No. 2X.....	33.50
Eastern Pennsylvania No. 2 foundry.....	33.00
Virginia No. 2X (including freight).....	36.77
Virginia No. 2 foundry (including freight).....	36.27
Basic.....	33.00
Gray forge.....	32.00
Bessemer.....	36.30
Standard low phosphorus.....	53.00
Low phosphorus (copper bearing).....	50.00

Coke.—The coke situation is not improved; in fact, some blast furnaces and foundries are suffering more severely from shortage than at any time this winter. There is no selling of coke in this market, leading handlers being sold up for all of this year. Fuel Ad-

ministrator Garfield has announced that existing prices of coke will be effective throughout 1918.

Ferroalloys.—The market for ferromanganese and spiegeleisen is extremely quiet, the only sales reported consisting of carload lots. Ferromanganese is firm at \$250 per ton for the 80 per cent and spiegeleisen is quoted at \$60 to \$62.50 at furnace.

Billets.—Government requirements of open-hearth re-rolling billets will probably be very large within the near future. Practically no commercial business is being done, and the price of \$47.50, Pittsburgh, per ton is therefore largely nominal.

Sheets.—A leading sheet mill in eastern Pennsylvania is attempting to take care of its regular customers on their requirements for first quarter, but is finding it difficult to anticipate what its production will be owing to shortage of coke and coal. We quote No. 10 blue annealed sheets at 4.25c., Pittsburgh; No. 28 black at 5c., and No. 28 galvanized at 6.25c.

Structural Material.—There are a few small Government projects before the mills, but commercial business is very dull. The Pennsylvania Railroad is in the market for 500 to 1000 tons of structural shapes for its requirements during the first quarter. Export companies report that it is now easier to obtain permits for exporting shapes, and some mills are willing to quote on export business, especially when better prices can be had than for domestic business. Production is being curtailed in several eastern Pennsylvania mills owing to shortage of coal. We quote plain material at 3c., Pittsburgh.

Plates.—The Pennsylvania Railroad is in the market for about 5000 tons of universal patch plates for prompt delivery. These plates are to be used in the repair of freight cars. Some of the producers of plates are now taking care of their regular customers on first quarter requirements, but are hampered in making deliveries owing to the embargo on all freight shipments, which went into effect on the Pennsylvania Railroad on Friday last. A small mill in this territory continues to offer plates for nearby delivery at 7c., Pittsburgh. It is reported that the owners of this mill have informed the steel distribution committee of the American Iron and Steel Institute that they will furnish the Government with plates at the fixed price of 3.25c., Pittsburgh, if the Government will provide them with slabs at the fixed price. Another Pennsylvania mill, which has sufficient open-hearth capacity for a part of its rolling capacity, is receiving Government orders to the extent of its ingot capacity, while the remainder of its output of plates is being sold commercially. We quote plates at 3.25c., Pittsburgh.

Iron and Steel Bars.—An export order for 2500 tons of soft bars for the British Government was taken last week by an eastern Pennsylvania mill at the fixed price of 2.90c., Pittsburgh. The mill was very glad to obtain this order, many of its scheduled rollings having been set aside because of inability to ship over the Pennsylvania Railroad. The market for bar iron is very dull. Bar iron mills are hampered by shortage of coal and scrap. We quote soft steel bars at 2.90c., Pittsburgh, and bar iron at 3.50c., Pittsburgh base or f.o.b. mill, according to point of destination.

Mill Cinder and Scale.—About the first of each year, a large quantity of mill cinder and scale is sold in this market, but this year the conditions have not been favorable for the sale of mill cinder, owing to the large amount of coke required for its use in a blast furnace. Such sales as have been negotiated are on the basis of \$2.50 per ton, delivered, while a year ago \$4 per ton, delivered, was generally obtained. There has been a somewhat better demand for scale, which is selling at \$6.50 to \$7.50 per ton, delivered, these prices being about the same as a year ago.

Old Material.—Mills in the Pittsburgh district are now freely paying the 3½ per cent commission to dealers and brokers, which is an indication of the scarcity of scrap and the great need of it by the mills. In eastern Pennsylvania, commissions have not yet been paid, with one exception, but prices have stiffened. Nearly all of the mills now offer \$30, delivered, for No. 1 heavy

melting steel. Old iron rails are about \$2 per ton higher and turnings and borings for blast furnace use have advanced from \$2 to \$2.25 per ton. Wrought iron and soft steel pipes and tubes are now firm at \$32.50 per ton. It is asserted that some governmental action must be taken soon to procure the scrap which the mills need. There are reports that scrap is being hoarded. Government control of the scrap business, under a dictator, is not an impossible outcome, if present conditions continue. No official action has been taken toward this end, but unofficially the proposal has been made. It is freely predicted that the Government would encounter problems it has not met with before in handling a business as intricate as the scrap trade unless an experienced scrap man were made dictator with plenary powers. The trade has been confused in its interpretation of the recent recommendations of the Committee on Steel and Steel Products of the American Iron and Steel Institute as to whether malleable cast scrap of all kinds, including iron car wheels, can be sold at above \$30 when going to foundries. A number of dealers have construed this recommendation as applying only to sales to steel mills, and numerous sales to foundries have been made at prices considerably above \$30. We quote for delivery in eastern Pennsylvania as follows:

No. 1 heavy melting steel.....	\$30.00
Steel rails, rerolling	35.00
Low phosphorus heavy melting.....	38.00 to 40.00
Low phosphorus (not guaranteed)...	33.00 to 35.00
Old iron rails	40.00 to 42.00
Old carwheels	30.00
No. 1 railroad wrought	35.00
No. 1 yard wrought	33.00 to 35.00
No. 1 forge fire	23.00 to 24.00
Bundled sheets	23.00 to 24.00
No. 2 busheling	17.00 to 18.00
Turnings (for blast furnace use)...	17.25 to 17.75
Machine shop turnings (for rolling mill use)	19.00 to 19.50
Cast borings (for blast furnace use)...	17.00 to 17.50
Cast borings (clean).....	20.00
No. 1 cast	30.00
Grate bars	22.50 to 23.00
Stove plate	22.50 to 23.00
Railroad malleable	30.00
Wrought iron and soft steel pipes and tubes (new specifications)	32.50

Birmingham

BIRMINGHAM, ALA., Jan. 7.

With sales being made every day almost, in some instances for delivery during the second quarter and with others for the last half of the year, Southern furnace companies are not worrying to any great extent about the announcement that all contracts beyond April 1 must be closed with an understanding of possible Government revision. The predictions are made in this territory that there will be a very short supply of iron and that a famine will be noted before long. Production is being held up to a good mark, though it is difficult to do so because of the coke supplies. Coal production is heavy. Federal delivery orders are bringing about some trouble with the coke producers, though the output at the ovens is still above normal. While some hope is expressed that the Government taking over the railroads might offer some help in the transportation of iron, the conditions recently have been worse, if anything. Delays are still noted on business that was accepted a year ago, and representatives of consumers in the North and East are still in this section urging the shipment of iron. Two furnaces are to resume operations this month, according to the general program, while the Trussville furnace will probably start in during the following month. The Birmingham Trussville Iron Co., in which Chicago capitalists are interested, will soon have its new coal mine putting out a couple of hundred tons of coal daily and a 1400-ton washer is nearing completion rapidly. A considerable tonnage of ore has been laid in and the coke ovens will be ready when the washed coal begins to arrive. This furnace will add about 200 tons to the daily output of iron of this section. Federal prices obtain, f.o.b. furnaces, \$33 per ton, No. 2 foundry. No concessions are to be heard of, home consumers paying the same prices as others.

Cast Iron Pipe.—The cast iron pipe trade is quiet and there is likely to be some curtailment of production before long, if more business is not received. A

little Government business was received recently, but the total was not extensive. Negotiations are on for some South American cast iron pipe business, but until it has been definitely settled on, more or less care is to be exercised in the operations of plants.

Old Material.—The old material market in the South shows a little more strength and, while there have been but few changes for the week in the quotations, all figures are looking up. The car situation has changed but little. Dealers in scrap iron and steel are still a little uncertain as to whether to make effort to take on contracts or wait a little yet. The Government rulings as to pig iron are being felt by the old material dealers. Quotations of old material follow:

Old steel axles	\$32.00 to \$33.00
Old steel rails	28.00 to 30.00
Heavy melting steel	23.00 to 24.00
No. 1 R. R. wrought	30.00 to 35.00
No. 1 cast	25.00 to 27.50
Stove plate	19.50 to 21.50
Old carwheels	25.00 to 30.00
Tramcar wheels	20.00 to 25.00
Machine shop turnings	17.00 to 18.00
Cast iron borings	13.00 to 15.00

Coal and Coke.—Coal and coke production in Alabama and throughout the South shows increase, but the shortage of the products is still acute. Government priority orders are being given due consideration by operators, but demands from all directions are very urgent. Coke producers have contracts which forbid them entering the market with any degree of high anticipation. Producers of coal here are prevailing on labor to not only give full time during the week days but are urging Sunday and overtime work in order to get out the largest possible output of coal.

St. Louis

ST. LOUIS, Jan. 7.

Pig Iron.—Conditions in the pig iron market have shown no relief during the week, and the consumers who are not properly covered are beginning to despair of getting the material which they may need to meet their contracts, unless those contracts have a Government bearing. No business is being taken for the first half except in off iron. No business is wanted for the third quarter and it is absolutely refused for the fourth quarter. While there is reputed to be some uncertainty as to prices, the best opinion is that the Government will not permit the market to be upset by any changes not absolutely necessary. The inquiry for pig iron continues in small lots with a big aggregate, but very little of the call is being filled. The difficulties in the market are shown by the fact that the inquiry recently reported for 1000 to 1500 tons of Virginia iron is still unfilled and is being made up gradually in small lots.

Coke.—The coke market for the past week has been absolutely dead, with no inquiries or sales and no disposition on the part of producers to make sales. It has been found impossible to fill the requirements of old customers and such as are now without contracts are to be given parts of their needs and these allotments will be subject to Government requirements.

Finished Iron and Steel.—In finished products, there has, of necessity, been no activity in the way of new business, and the deliveries on old contracts have not improved, rather the reverse. Movement out of warehouse has been as free as the supplies have made it possible and more business would be placed if the material could be supplied. For stock out of warehouse we quote as follows: Soft steel bars, 4.17c.; iron bars, 4.17c.; structural material, 4.27c.; tank plates, 4.52c.; No. 8 sheets, 5.47c.; No. 10 blue annealed sheets, 5.52c.; No. 28 black sheets, cold rolled, one pass, 6.52c.; No. 28 galvanized sheets, black sheet gage, 7.77c.

Old Material.—Dealers in scrap are still endeavoring to adjust themselves to the condition created by the Government prices, but with sources of supply wanting the full Government figure and the consumer willing to pay no more than that, a deadlock has been created which it will take a little time to settle. The commission basis is favorably considered by the dealers and the situation is expected to clear itself in a short time,

as soon as the facts are digested by all concerned. Car conditions continue bad, both as to supply and character of rolling stock, and this, with the period of the year, is operating to minimize business. Lists out include the Mobile & Ohio 200 tons and the Wabash 2250 tons. Others are expected later in the week. We quote dealers' prices f.o.b. consumers' works, St. Louis industrial district, as follows:

Per Gross Ton	
Old iron rails	\$36.00 to \$36.50
Old steel rails, rerolling	34.50 to 35.00
Old steel rails, less than 3 ft.	37.50 to 38.00
Relaying rails, standard section, subject to inspection	60.00 to 75.00
Old car wheels	29.50 to 30.00
No. 1 RR. heavy melting steel scrap.	29.50 to 30.00
Heavy shoveling steel	27.25 to 27.75
Ordinary shoveling steel	26.50 to 27.00
Frogs, switches and guards cut apart.	29.50 to 30.00
Ordinary bundled sheet scrap	22.75 to 23.25
Heavy axle and tire turnings	20.50 to 21.00

Per Net Ton	
Iron angle bars	\$35.50 to \$36.50
Steel angle bars	28.50 to 29.00
Iron car axles	45.50 to 46.00
Steel car axles	43.00 to 43.50
Wrought arch bars and transoms	41.50 to 42.00
No. 1 railroad wrought	30.75 to 31.25
No. 2 railroad wrought	29.50 to 30.25
Railroad springs	30.00 to 30.50
Steel couplers and knuckles	30.50 to 31.00
Locomotive tires, 42 in. and over, smooth inside	34.00 to 35.00
No. 1 dealers' forge	23.50 to 24.00
Cast iron borings	17.00 to 17.25
No. 1 busheling	24.75 to 25.25
No. 1 boilers, cut to sheets and rings	23.00 to 23.50
No. 1 railroad cast scrap	25.50 to 26.00
Stove plate and light cast scrap	20.50 to 21.00
Railroad malleable	26.00 to 26.50
Agricultural malleable	23.00 to 23.50
Pipes and flues	22.75 to 23.00
Heavy railroad sheet and tank scrap	22.50 to 23.00
Railroad grate bars	19.00 to 19.50
Machine shop turnings	17.50 to 17.85
Country mixed scrap	20.50 to 21.00
Uncut mixed railroad scrap	23.50 to 24.00

British Steel Market

Subsidy Arrangements for Pig Iron Expected— No Demand for American Steel

(By Cable)

LONDON, ENGLAND, Jan. 9

An official statement is expected shortly regarding subsidy arrangements for pig iron. Heavy January applications are anticipated for Cleveland pig iron and more stringent allocations exist, confined chiefly to Government needs. American semi-finished steel is in poor demand and wire rods are nominal. Tin plates are firm at 31s. 3½d. basis. Ferromanganese is steady with some Allied buying reported. Toluol is quoted at 28d. per gal. with other coke by-products unchanged. We quote as follows:

Tin plates coke, 14 x 20; 112 sheets, 108 lb., f.o.b. Wales, 31s. 3½d.
Ferromanganese \$250 c.i.f. nominal for export to America.
Ferrosilicon, 50 per cent, c.i.f. £35 upward.
On other products control prices are as quoted in THE IRON AGE of July 19, p. 171.

Buffalo

BUFFALO, Jan. 7.

Pig Iron.—A novel and unusual feature of the market for this district is that inquiry is being received from almost every section of the country for every grade of iron. Users who have never heretofore approached this market are now industriously seeking to place orders here, large and small, for second and third-quarter delivery, but there appears to be no iron obtainable with which to satisfy their needs. One large producer reports new orders taken on during the week aggregate less than 100 tons. Another producer states the only sales made were for off-grade iron, a small tonnage of which was disposed of. In fact, no sales to speak of have been made by any of the furnaces of the district. One of the largest producers advises it is sold up solidly for the entire year of 1918, and another has retired from the market because of the uncertainty in the shipping situation, and will not take on new business until it has caught up on deliveries and can see daylight ahead. An embargo on New York Central lines went into effect to-day on all freight out

of Buffalo to eastern points—except to a few local points between Buffalo and Rochester, which will further complicate the shipping situation and stagnate deliveries. Sales are also now restricted by the governmental stipulation relative to revision of contracts for iron, steel and fuel after March 31. This provision has taken away incentive for furnacemen to accept orders at this time for definite future shipment at an indefinite price and as a consequence furnaces are likely to sell little or no iron until it is announced what price will apply. Price schedules remain unchanged from last report, as follows, f.o.b. furnace Buffalo:

No. 1 foundry	\$34.50
No. 2 X	33.50
No. 3 foundry	32.50
Gray forge	32.00
Malleable	33.50
Basic	33.00
Lake Superior charcoal, f.o.b. Buffalo	39.75

Finished Iron and Steel.—The most marked development during the past week has been the shutting down of plants on account of fuel shortage. The Government demands are assuming larger proportions in plates, structural material and bars, and many selling agencies report they are doing practically nothing except on material for Government work. The Ferguson Steel & Iron Co. has the contract for 100 tons of structural steel for plant addition for the Common Sense Mfg. Co., Buffalo. It is understood that bids are soon to be taken for steel for a 200-room hotel at Binghamton, N. Y., for which the Palmer Construction Co., architect and engineer, Security Mutual Building, that city, has prepared plans.

Old Material.—Although there is good demand for all kinds of scrap, dealings are almost at a standstill on account of the practical impossibility of getting shipments of scrap material into yards for classifying because of freight congestion, or of getting cars out for delivery for the same reason. These difficulties, zero weather, labor shortage and scarcity of cars, have had the effect of putting a quietus on a large amount of trade which otherwise might have come into play. An embargo which went into effect this noon on New York Central lines against shipments out of Buffalo to eastern points is having a further restricting and paralyzing effect on the transaction of business. Prices, although largely nominal, are firm and without change from last week's schedule, as follows, per gross ton, f.o.b. Buffalo:

Heavy, melting steel	\$30.00
Low phosphorus	40.00
No. 1 railroad wrought	35.00
No. 1 railroad and machinery cast	30.00
Iron axles	\$45.00 to 47.00
Steel axles	45.00 to 47.50
Carwheels	30.00
Railroad malleable	30.00
Machine shop turnings	18.00 to 18.50
Heavy axle turnings	26.00 to 27.00
Clean cast borings	19.00 to 20.00
Iron rails	37.00 to 38.00
Locomotive grate bars	20.00 to 21.00
Stove plate	22.00 to 23.00
Wrought pipe	26.00 to 27.00
No. 1 busheling scrap	26.00 to 27.00
No. 2 busheling scrap	17.00 to 18.00
Bundled sheet stamping scrap	19.00 to 20.00

New York

NEW YORK, Jan. 9.

Pig Iron.—Interest centers in the recent official announcement at Washington providing that no new contracts calling for delivery of iron and steel products after April 1 can specify a price unless coupled with a clause making the price subject to revision by the Government and the effect is to put a stop almost entirely to new buying. Furnaces, not knowing what costs will be after April 1, are unwilling to make contracts which may be revised downward to prices below cost. Conservative sellers are inclined to believe that the action of the Government may have good effect, as a temporary cessation of buying will give every one a chance to study the situation and await developments. Many buyers are anxious to cover for last half, but no definite inquiries of importance are pending. There is some selling for export to China and other foreign countries and a number of sales, including one for about 1500 tons, have been made at Government prices, plus

slight changes for unusual expenses in some cases. For early delivery, we quote as follows, f.o.b. tidewater:

No. 1 X	\$35.25
No. 2 X	34.25
No. 2 Plain	33.75
No. 2 Southern (rail and water)....	\$38.75 to 39.25
No. 2 Southern (all rail).....	29.15 to 39.65
No. 2 X Virginia	37.00 to 37.25

Ferroalloys.—The market for domestic ferro-manganese is quiet but firm. There have been sales of a few carloads at \$250 in the last week and inquiry has been a little more active than for the past two weeks. The only new inquiry of importance is one for 1200 tons which appeared Monday. A 1200-ton lot has been before the market for two or three weeks. A fair-sized order for British alloy for consumption in war material was recently placed, but most dealers in the foreign alloy have made no sales in months. Deliveries on orders taken early in 1917 are far in arrears and it will take some months to clear the books of these. One dealer received 650 tons from England in the last week, but imports in November were probably less than 1000 tons, with December not much in excess of this. Domestic output in November was about 20,800 tons with the December not much if any more. These facts are taken as an indication of a stronger market in the near future. Spiegeleisen is not active. It is reported that a Canadian consumer has taken 2000 to 3000 tons for February delivery at \$55, furnace. The quotation for the 20 per cent grade is maintained at \$60, furnace. There is quite a little inquiry for the 30 to 40-per cent alloy. Ferrosilicon, 50 per cent, is strong at \$175 to \$180. Other ferroalloys are quoted regularly in the first issue of each month.

Finished Iron and Steel.—There are signs of easier deliveries in steel bars and wire, but no mills are openly seeking business. Such a condition is indeed not to be looked for, with mill shut-downs on account of coal shortage and refusals of railroads to take shipments for Atlantic seaboard. Business is at a standstill. Appointments of district experts for Government service to formulate railroad equipment needs are expected before long; meanwhile there are available the substantially interchangeable designs of various types of cars agreed upon by the car builders. The general buying to be expected from this source will undoubtedly include steel rails, particularly as all roads have not secured 1918 mill space. In this connection must be taken up the price at which new sales will be put through, in view of the fact that no agreed figure has been established and that last Government purchases were done at \$38 and \$40, while a Canadian road has since paid over \$70 and 100-ton lots have commanded \$85 per ton. As to the general scale of agreed prices on finished steel, the belief is expressed that present levels will continue through the second quarter. Opinions that a plate supply of proportions will accrue out of rejections under ship-plate specifications are not taken seriously by plate mill representatives. They mention that the modified specifications now holding reduce the percentage of rejects and tank plate users can hardly look for relief on this account. In fabricated steel work the Pennsylvania is inquiring for about 500 tons for repair purposes. We quote mill shipments of steel bars at 3.095c., New York; shapes 3.195c., plates 3.445c. and bar iron 3.695c., New York. Out of store prices are 1c. higher, and to all must be added 3 per cent of the freight charge for the transportation tax.

Cast-Iron Pipe.—There is increased activity in cast-iron pipe in both public and private letting. On the 300 tons for New Bedford, Mass., on which bids were received last week, the Donaldson Iron Co. was the low bidder, slightly shading the new agreed prices. The city of Boston will open bids Jan. 15 for 1450 tons of 4, 6, 10, 12 and 16-in. pipe and 200 tons of special castings. We quote the new prices: \$55.35 New York, for 6-in. and heavier, and \$58.35 for 4-in.; \$65.35 for 3-in. and \$1 additional for class A and gas pipe.

Old Material.—Leading mills in Pittsburgh and eastern Pennsylvania districts are trying to place orders of size for heavy melting steel and brokers are booking considerable business, but there is much hesita-

tion on account of embargoes, unfavorable weather and the new demurrage rates. Dealers fear that on account of the difficulty of obtaining labor, especially during the cold weather, demurrage charges will pile up rapidly. On account of the activity of railroads being centered on the movement of coal, the movement of scrap has been very slow the past two weeks, especially during the past week. We quote prices of brokers as follows to New York producers and dealers, per gross ton, New York:

Heavy melting steel scrap for shipment to eastern Pennsylvania....	\$26.00 to \$27.00
Old steel rails (short lengths) or equivalent heavy steel scrap.....	26.00 to 26.25
Re-rolling rails	32.00 to 33.00
Relaying rails	60.00 to 70.00
Iron and steel car axles.....	42.00 to 44.00
No. 1 railroad wrought.....	32.00 to 33.00
Wrought-iron track scrap	32.00 to 33.00
No. 1 yard wrought long.....	32.00 to 33.00
Light iron	9.00 to 10.00
Cast borings (clean).....	16.50 to 17.00
Machine-shop turnings	16.50 to 17.00
Mixed borings and turnings.....	14.00 to 15.00
Wrought-iron pipe (1 in. minimum diameter), not under 2 ft. long....	29.00 to 30.00

Dealers in New York and Brooklyn are quoting as follows to local foundries, per gross ton, but for delivery to cupola platforms of Brooklyn foundries about \$3 more is quoted:

No. 1 machinery cast.....	\$29.00 to \$30.00
No. 1 heavy cast (column, building materials, etc.)	23.00 to 24.00
No. 2 cast (radiators, cast boilers, etc.)	24.00 to 25.00
Stove plate	21.00 to 22.00
Locomotive grate bars	20.00 to 21.00
Malleable cast (railroad).....	27.00 to 27.50
Old carwheels	27.00 to 27.50

Phillips Isham, iron and steel broker, has removed from the seventh floor of the Liberty Tower Building, New York, to a suite on the twenty-fifth floor.

Drastic Regulation of Coal and Coke Contracts

Fuel Administrator H. A. Garfield has issued regulations covering the making of new contracts of coal and coke, and some of the provisions are of considerable importance; in fact, they are regarded in the coal and coke trade as all but abolishing the contract system. The principal provisions of the regulations are as follows:

- 1.—No such contract shall provide for the delivery or supply of coal or coke over a period longer than one year; and such period of one year shall terminate at not more than 18 months from the date of actual execution of the contract.
- 2.—Contracts for coal and coke shall provide that the prices shall not exceed the price fixed by the President, in effect at the time when shipments are made.
- 3.—Every such contract shall provide that it shall be canceled upon receipt of a request or order from the Government.
- 4.—Every such contract shall provide that the coal or coke shall be subject to requisition by the United States Fuel Administrator at any time during the continuance of the contract and prior to actual receipt and unloading of the coal or coke so requisitioned at the point of ultimate destination.
- 5.—Jobbers may make contracts for the sale of coal or coke owned by them or to which they are entitled under contracts with operators or producers in conformity with Government regulations.
- 6.—A certified copy of each contract must be filed with the United States Fuel Administrator.

The American Steel & Wire Co. banked three of its blast furnaces in Cleveland last week because of lack of coke, and on Saturday shut down its Cuyahoga works because of not having coal. It now has only one out of five blast furnaces operating in Cleveland, and the prospects of an early resumption are not bright.

Prices Finished Iron and Steel, f.o.b. Pittsburgh

Freight rates from Pittsburgh on iron and steel articles, aside from wrought iron and steel pipe in carloads, per 100 lb., New York, 19.5c.; Philadelphia, 18.5c.; Boston, 21.5c.; Buffalo, 11.6c.; Cleveland, 13.5c.; Cincinnati, 18.5c.; Indianapolis, 20c.; Chicago, 21.5c.; St. Louis, 27c.; Kansas City, 47c.; minimum carload, 36,000 lb.; St. Paul, 35.5c.; minimum carload, 36,000 lb.; Denver, 79c.; minimum carload, 36,000 lb.; Omaha, 47c.; minimum carload, 36,000 lb.; New Orleans, 30.7c.; Birmingham, 46c.; Pacific Coast, 75c.; minimum carload, 80,000 lb. To the Pacific Coast the rate on steel bars and structural steel is 90c., minimum carload, 40,000 lb.; and 85c., minimum carload, 50,000 lbs. On wrought iron and steel pipe the rate from Pittsburgh to Kansas City is 40c. per 100 lb., minimum carload 46,000 lb.; to Omaha 40c., minimum carload 46,000 lb.; to St. Paul 35.5c., minimum carload 46,000 lb.; Denver 79c., minimum carload 46,000 lb. A 3 per cent transportation tax now applies.

Structural Material

I-beams, 3 to 15 in.; channels, 3 to 15 in.; angles, 3 to 6 in. on one or both legs, 1/4 in. thick and over, and zees 3 in. and over, 3c.

Wire Products

Wire nails, \$3.50 base per keg; galvanized, 1 in. and longer, including large-head barb roofing nails, taking an advance over this price of \$2, and shorter than 1-in., \$2.50. Bright basic wire, \$3.35 per 100 lb.; annealed fence wire, Nos. 6 to 9, \$3.25; galvanized wire, \$3.95; galvanized barb wire and fence staples, \$4.35; painted barb wire, \$3.65; polished fence staples, \$3.65; cement-coated nails, \$3.40 base; these prices being subject to the usual advances for the smaller trade, all f.o.b. Pittsburgh, freight added to point of delivery, terms 60 days net, less 2 per cent off for cash in 10 days. Discounts on woven-wire fencing are 47 per cent off list for carload lots, 46 per cent for 1000-rod lots, and 45 per cent off for small lots, f.o.b. Pittsburgh.

Bolts, Nuts and Rivets

Large rivets, 7/16 in. x 6 in. smaller and shorter rivets, 45-10 per cent off list
Machine bolts h.p. nuts, 1/4 in. x 4 in.
Smaller and shorter, rolled threads, 50-10 per cent off list
Cut threads, 50-5 per cent off list
Larger and longer sizes, 40-10 per cent off list
Machine bolts, c.p.c. and t. nuts, 1/4 in. x 4 in.
Smaller and shorter, 40-10 per cent off list
Larger and longer, 35-5 per cent off list
Carriage bolts, 1/4 in. x 5 in.
Smaller and shorter, rolled threads, 50-5 per cent off list
Cut threads, 40-10-5 per cent off list
Larger and longer sizes, 40 per cent off list
Lag-bolts, 50-10 per cent off list
Flow bolts, Nos. 1, 2, 3, 50 per cent off list
Hot pressed nuts, sq. blank, 2.50c. per lb. off list
Hot pressed nuts, hex., blank, 2.30c. per lb. off list
Hot pressed nuts, sq., tapped, 2.30c. per lb. off list
Hot pressed nuts, hex., tapped, 2.10c. per lb. off list
C.p.c. and t. sq. and hex. nuts, blank, 2.25c. per lb. off list
C.p.c. and t. sq. and hex. nuts, tapped, 2.00c. per lb. off list
Semi-finished hex. nuts, 1/4 in. and larger, 60-10-10 per cent off list
9/16 in. and smaller, 70.5 per cent off list
Stove bolts, 70-10 per cent off list
Stove bolts, 2 1/2 per cent extra for bulk
Tire bolts, 50-10-5 per cent off list
The above discounts are from present lists now in effect.
All prices carry standard extras.

Wire Rods

No. 5 common basic or Bessemer rods to domestic consumers, \$57; chain rods, \$65; screw, rivet and bolt rods and other rods of that character, \$65. A tentative differential of \$10 per ton over soft rods for high carbon rods has been agreed upon.

Railroad Spikes and Track Bolts

Railroad spikes, 9/16 in. and larger, per 100 lb., \$3.90; track bolts, \$4.90. Boat spikes, \$5.25 per 100 lb., f.o.b. Pittsburgh.

Terne Plate

Effective Nov. 7, prices on all sizes of terne plates are as follows: 8-lb. coating, 200 lb., \$15 per package; 8-lb. coating, I. C., \$15.30; 12-lb. coating, I. C., \$16.75; 15-lb. coating, I. C., \$17.75; 20-lb. coating, I. C., \$19; 25-lb. coating, I. C., \$20; 30-lb. coating, I. C., \$21; 35-lb. coating, I. C., \$22; 40-lb. coating, I. C., \$23 per package, all f.o.b. Pittsburgh, freight added to point of delivery.

Iron and Steel Bars

Steel bars at 2.90c. from mill, and 4.50c. to 5c. from warehouse in small lots for prompt shipment. Refined iron bars, 3.50c. in carload and larger lots, f.o.b. mill.

Wrought Pipe

The following discounts are to jobbers for carload lots on the Pittsburgh basing card, as announced Nov. 5 by the Government on steel pipe, those on iron pipe being the same as quoted for some time:

Steel				Butt Weld			
Inches	Black	Galv.		Inches	Black	Galv.	
1/4, 1/2 and 3/4	44	17 1/2		1/4 and 1/2	23	+	4
1/2	48	33 1/2		3/4	24	+	8
3/4 to 3	51	37 1/2		1	28		10
				3/4 to 1 1/2	33		17
Lap Weld				Butt Weld, extra strong, plain ends			
2	44	31 1/2		1 1/4	18		8
2 1/2 to 6	47	34 1/2		1 1/2	25		11
7 to 12	44	30 1/2		2	26		12
13 and 14	34 1/2			2 1/2 to 6	28		15
15	32			7 to 12	25		13
Lap Weld, extra strong, plain ends				Butt Weld, extra strong, plain ends			
2	42	30 1/2		1/4, 1/2 and 3/4	22		5
2 1/2 to 4	45	33 1/2		1/2	27		14
4 1/2 to 6	44	32 1/2		3/4 to 1 1/2	33		18
7 to 8	40	26 1/2					
9 to 12	35	21 1/2					
Lap Weld, extra strong, plain ends				Butt Weld, extra strong, plain ends			
2	42	30 1/2		1 1/4	19		4
2 1/2 to 4	45	33 1/2		1 1/2	25		11
4 1/2 to 6	44	32 1/2		2	27		14
7 to 8	40	26 1/2		2 1/2 to 4	29		17
9 to 12	35	21 1/2		4 1/2 to 6	28		16
				7 to 8	20		8
				9 to 12	15		8

To the large jobbing trade an additional 5 per cent is allowed over the above discounts, which are subject to the usual variations in weight of 5 per cent. Prices for less than carloads are four (4) points lower basing (higher price) than the above discounts on black and 5 1/2 points on galvanized.

On butt and lap weld sizes of black iron pipe, discounts for less than carload lots to jobbers are seven (7) points lower (higher price) than carload lots, and on butt and lap weld galvanized iron pipe are nine (9) points lower (higher price).

Boiler Tubes

The following are the prices for carload lots, f.o.b. Pittsburgh, announced Nov. 13, as agreed upon by manufacturers and the Government:

Lap Welded Steel	Charcoal Iron
3 1/2 to 4 1/2 in. 34	3 1/2 to 4 1/2 in. 12 1/2
2 1/2 to 3 1/2 in. 24	3 to 3 1/2 in. + 5
2 1/4 in. 17 1/2	2 1/2 to 2 3/4 in. + 7 1/2
1 1/2 to 2 in. 13	2 to 2 1/4 in. + 22 1/2
	1 1/2 to 1 1/4 in. + 35

Standard Commercial Seamless—Cold Drawn or Hot Rolled

Per Net Ton	Per Net Ton
1 in. \$340	1 1/4 in. \$220
1 1/4 in. 280	2 to 2 1/4 in. 190
1 1/2 in. 270	2 1/2 to 3 in. 180
1 3/4 in. 220	4 in. 200
	4 1/2 to 5 in. 220

These prices do not apply to special specifications for locomotive tubes nor to special specifications for tubes for the Navy Department, which will be subject to special negotiation.

Sheets

Makers' price for mill shipments on sheets of United States standard gage, in carload and larger lots, are as follows, 30 days net or 2 per cent discount in 10 days.

Blue Annealed—Bessemer	Cents per lb.
Nos. 3 to 5	4.20
Nos. 9 and 10	4.25
Nos. 11 and 12	4.30
Nos. 13 and 14	4.35
Nos. 15 and 16	4.45

Box Annealed, One Pass Cold Rolled—Bessemer

Nos. 17 to 21	4.80
Nos. 22 and 24	4.85
Nos. 25 and 26	4.90
No. 27	4.95
No. 28	5.00
No. 29	5.10
No. 30	5.20

Galvanized Black Sheet Gage—Bessemer

Nos. 10 and 11	5.25
Nos. 12 and 14	5.35
Nos. 15 and 16	5.50
Nos. 17 to 21	5.65
Nos. 22 and 24	5.80
Nos. 25 and 26	5.95
No. 27	6.10
No. 28	6.25
No. 29	6.50
No. 30	6.75

Tin-Mill Black Plate—Bessemer

Nos. 15 and 16	4.80
Nos. 17 to 21	4.85
Nos. 22 to 24	4.90
Nos. 25 and 27	4.95
No. 28	5.00
No. 29	5.05
No. 30	5.05
Nos. 30 1/2 and 31	5.10

Metal Markets

The Week's Prices

Cents per Pound for Early Delivery							
Copper, New York		Tin.	Lead		Spelter		
Jan.	Lake	Electro-lytic	New York	New York	St. Louis	New York	St. Louis
2....	23.50	23.50	80.00	6.50	6.35	7.87½	7.62½
3....	23.50	23.50	85.00*	6.50	6.35	7.87½	7.62½
4....	23.50	23.50	85.00*	6.70	6.55	7.87½	7.62½
5....	23.50	23.50	85.00*	6.70	6.55	7.87½	7.62½
7....	23.50	23.50	85.00*	6.70	6.55	7.87½	7.62½
8....	23.50	23.50	85.00*	6.70	6.55	7.87½	7.62½

*Nominal.

NEW YORK, Jan. 9.

The markets are featureless and dull. Copper, at regulated prices, is moderately active. Tin is still scarce and nominal at high levels. Lead is in fair demand and higher. Spelter is lifeless and unchanged. Antimony is inactive and slightly lower.

New York

Copper.—At the Government price of 23.50c. for carload and larger lots and at 24.67½c. for less than carload lots, a good business is being done for delivery in the first quarter and for all purposes. Government demand has been expanding decidedly lately and so has that for the Allies, but despite this the feeling is strong that there is and will be sufficient copper for these needs and others. It is a question whether production will not be slowed down some by the fuel scarcity combined with railroad congestion, but only time will answer this. Jobbers report that some small consumers are coming to them for copper at 23.50c., the price stipulated in their contracts, but such business has been refused in several cases. It is a question as to how such needs are being supplied when it is stipulated that 23.50c. copper must be used. Those desiring copper in general are apparently getting all they require.

Tin.—There is no spot market in tin and quotations are purely nominal at about 85c., New York. On Jan. 2 a small lot was sold at 80c. This was due as much as anything to the large decline in the London market at that time. The big slump there, followed by a rapid advance, has no satisfactory explanation on this side. It may have been due to some negotiations regarding the permit question, but details are lacking. In the last few days a few buyers plucked up courage and bought far futures. It is estimated that at least 700 to 800 tons was negotiated inside of two days, mostly Straits, with some Banca and Chinese mixed in. This may be regarded as an improvement over the past, but the rank and file of buyers are holding back, preferring to wait for a settled market. Arrivals to Jan. 3, inclusive, have been 460 tons. Spot Straits was quoted in London Jan. 7 at £282 per ton, which compares with £272 on Jan. 3 and £309 10s. on Dec. 21.

Lead.—On Jan. 3 the American Smelting & Refining Co. advanced its quotation ¼c. per lb. to 6.50c., New York. This was followed by an advance in the outside market to 6.70c., New York, on Jan. 4, which we quote as the market yesterday, with the St. Louis level at 6.55c. It is generally acknowledged that the reason for the advance was that, because Government purchases are being settled on the average St. Louis price and because the former New York price of the leading interest of 6.25c. was below the St. Louis average, it was logical to put it on a higher level. Spot lead is quoted at 6.75c. to 7c., New York. As a result of the action referred to the tone of the market is better and firmer, but business has been only moderate because of a lack of sellers.

Spelter.—The market for prime Western for early delivery is quoted at 7.62½c. to 7.75c., St. Louis, or 7.87½c. to 8c., New York, but demand is of very small volume. A little business has been done at both these levels but the situation is not strong. There has been no announcement regarding the 4000 tons of grade C

asked for by the Army, but it is understood that the Government has been able to obtain all it needed on the basis of the bids secured on the 1000-ton order for the Navy referred to in previous reports. Exports for 1917 will probably have slightly exceeded the 206,000 tons in 1916.

Antimony.—It is reported that the Government may soon purchase 200 to 300 tons of antimony for March-April delivery. Active competition for this is expected. The market for spot metal is dead at 14.50c. to 14.75c. per lb., New York, duty paid.

Aluminum.—No. 1 virgin metal, 98 to 99 per cent pure, continues in poor demand at 36c. to 38c. per lb., New York.

Chicago

JAN. 7.—The metal market has been quiet, although considerable copper is being shipped at the Government prices of 23.50c. for carloads and 24.67½c. for less than carload lots. Inquiry for lead has stiffened the market but sales have not been heavy. We quote as follows: Tin, 85c.; lead, 7c.; spelter, 7.75c.; antimony, 16.50c. On old metals we quote buying prices for less than carload lots as follows: Copper wire, crucible shapes, 21c.; copper clips, 20c.; copper bottoms, 19c.; red brass, 19.50c.; yellow brass, 14.50c.; lead pipe, 5c.; zinc, 5c.; pewter, No. 1, 40c.; tinfoil, 47.50c., and block tin, 55c.

St. Louis

JAN. 7.—The non-ferrous metals markets continue rather quiet with little change in price, though it is anticipated that there will be a change for the better in tin shortly as a result of the anticipated release of Straits tin to this country. Quotations, in carload lots, to-day were: Lead, 6.50c.; spelter, 7.75c. In less than carload lots the quotations were: Lead, 6.75c.; spelter, 8.50c.; tin, 80c.; copper, 25.12c.; Asiatic antimony, 18c. In the Joplin district, ore conditions continue bad. The severe weather is cutting the production, but the surplus piled up during productive periods is not materially diminished in the mine sheds, while the purchases of smelters, because of the car conditions, have not been moved. In consequence, there is about 15,000 tons of ore in each division referred to on hand here, or about 30,000 tons in all. Prices show but slight change, and those in the grades between the extreme price range, which was for zinc blende, 40 per cent metal, \$50 to \$70 per ton, with the average for the district at \$57.50. In calamine the basis range, 40 per cent metal, was \$32 to \$35 per ton, with the average for the district \$34 per ton. Lead ore, basis of 80 per cent metal, was quiet at \$75 per ton for top grades and the average for the district for the week was \$74 per ton. On miscellaneous scrap metals we quote dealers' buying prices as follows: Light brass, 10c.; heavy yellow brass, 14c.; heavy red brass and light copper, 19.50c.; heavy copper and copper wire, 20c.; pewter, 25c.; tinfoil, 42c.; zinc, 5c.; lead, 5.50c.; tea lead, 5c.

The malleable iron plant of the American Radiator Co., Buffalo, N. Y., has two annealing ovens equipped with Pruden carburizers for burning powdered coal installed by the Powdered Coal Engineering & Equipment Co., Chicago. They were fired about the middle of November. The first castings were run through the ovens while the brick work, which had been in the open from three to four months and so had been thoroughly saturated with water, was still wet. Harry E. Kies, manager of the malleable iron department of the American Radiator Co., reported that every piece had been properly annealed and was 25 per cent tougher than had been secured from the other furnaces equipped with the old burners. He estimated that the saving in coal would be around 30 per cent.

The Harlan & Hollingsworth works of the Bethlehem Shipbuilding Corporation, Wilmington, Del., has announced a wage advance, effective Jan. 2. With a change in working conditions, covering an 8-hr. day, the increase ranges from 10 per cent and above over the former wages. About 3000 men are affected.

In Time of War Preparing for Peace

Tariff Commission Protests Against Half Digested Methods and Tells of Its Plans for Thorough Investigation—Excess Profits Tax Under Discussion

WASHINGTON, Jan. 8.—Notwithstanding the announcements, official and unofficial, that the Administration will not ask Congress at the present session for revenue legislation of any kind, very vigorous efforts are being made looking to the early amendment of the excess profits tax provisions of the war revenue act and to the enactment during the war period of a measure embodying a comprehensive upward revision of the tariff schedules, including the transfer from the free to the dutiable list of a long line of commodities of much importance to the industries of the country. The demand for the revision of the excess profits tax provision is strictly non-partisan, this branch of the movement being led by a special committee of the American Mining Congress now in session here and supported by representatives of hundreds of shipbuilding and industrial corporations throughout the country, especially those formed since the beginning of the European war or which have been reorganized or greatly expanded during the war period.

Distinctly Political Move

The campaign to bring about the revision of the tariff, while supported to some extent by importing interests, has a distinctly political character and is under the leadership of Representative Joseph W. Fordney, the ranking Republican member of the House Committee on Ways and Means. So far as this movement contemplates the actual revision of the tariff schedules during the war period, it will encounter the opposition of the United States Tariff Commission and such obstacles as can be thrown in its way by the Democratic leaders of the House, whose control of that body, however, now depends upon their ability to secure the cooperation of a handful of members who are affiliated with neither the Democratic nor Republican parties.

The Excess Profits Tax

It has been made a matter of record in the investigation now being conducted by the Senate Commerce Committee into the operations of the Shipping Board that the excess profits tax law has deterred capitalists from financing new shipbuilding companies, and has also prevented existing shipyards from expanding their facilities for the purpose of taking on shipping board contracts. The Senate Committee has been informed by members of the shipping board that a number of shipyard projects have been abandoned since the purport of the excess profits tax law became apparent, and in executive session facts and figures have been submitted in support of this statement. The chief difficulty pointed out by the shipbuilders relates to the fact that new corporations have no past financial history, possess in many cases only borrowed capital and can make little or no claim to credit on capital account for good will, patents and other so-called intangible assets.

The special committee of the American Mining Congress in session here for the formulation of a protest to the House and Senate against the existing provisions of the excess profits tax law emphasize all the points made by the shipbuilders, and in addition raises a number of special objections pertinent to mining corporations. Its contentions briefly summarized are: (1) That mineral leases are tangible property and should be so regarded in considering invested capital for taxation purposes; (2) that individuals employed in prospecting for minerals should be regarded as "engaged in business, having no invested capital or merely nominal capital"; (3) that proceeds from the sale of stock to raise money for development and operation expenses should in no case be held as income of the corporation; and (4) that under the war revenue act the com-

missioner has ample power to determine the proportion of the income of a mining business which shall be considered as excess profits without requiring each taxpayer to furnish the necessary data to determine the invested capital.

Interest in the Tariff

The recent activity of the Tariff Commission, which has circularized several important industries soliciting information apparently designed for use in connection with a general revision of the tariff schedules, has created a widespread impression that the commission is preparing to co-operate with Congress in a general overhauling of the Underwood-Simmons tariff law. As a result, the commission is in receipt of many communications, some of them approving an early revision while others contain vigorous protests against the disturbance of the tariff schedules until the war is over and the revision can be made on the basis of a permanent peace. The great majority of the communications reaching the commission concede the necessity for tariff changes, and there can be no doubt that the sentiment of the country favors a general tariff readjustment as soon as a reliable appraisal can be had of the industrial conditions at home and abroad after the passage of the war emergency.

With a view to correcting any existing misapprehensions concerning the work it is undertaking, the Tariff Commission is about to issue a statement outlining its activities and the plans for future work. The functions of the commission in connection with revenue legislation are classified under two heads, as follows:

1. War work, in which the commission has assisted in the preparation of data to be used in war revenue legislation already enacted and to come, and has assisted the State Department and other departments in handling questions which are constantly arising.

2. The work of preparedness for the problems which must be solved as soon as peace is declared. It has reversed the maxim, "In time of peace prepare for war," and in time of war is preparing for peace.

Comprehensive Revision

The task which the commission now has under way and concerning which it is soliciting information from many sources is that of preparing for a comprehensive revision of the Underwood-Simmons act as soon as the war is over. In times past the custom has been to wait until the duty of writing new schedules was forced upon Congress by industrial or political exigencies and then under the whip of necessity to seek to collect in a few months data upon which to revise the entire tariff law. European countries, on the other hand, long ago adopted the far more scientific plan of spending years in investigating industrial conditions and in the accumulation of information, constantly kept up to date, upon which to base changes from time to time.

"The question as to whether there is to be a revision of the tariff, when it is to take place and what the rates are to be Congress alone can determine," says Commissioner William S. Culbertson, who has prepared the Tariff Commission's statement. "But if the establishment of a permanent tariff commission in this country signifies anything, it signifies a desire for more deliberate scientific methods in gathering tariff data, so that Congress, if it does decide to take up the tariff, will have adequate information at hand. It was a wise policy that set our commission to work at a time when fundamental changes are taking place in public finance, in industry and in international relations.

"The work which our commission has before it cannot be done in a few months. It requires time. From

its very nature it cannot be spectacular. A large part of it will be hard drudgery. Few problems are more complex and diversified than the problems of production, distribution, labor, finance, consumption and foreign trade which are presented by tariff schedules.

Effects of the War

"The effect of the war on the economic life of our nation must be evident to the most indifferent onlooker. Such times of radical change as those through which the world is now passing are times for observation. War to-day is modifying our views of labor, of distribution, of finance and production—in fact, it is shaking the whole traditional structure of our economic life. Is it not a good time for a scientific consideration of our future development? The war, instead of lessening, has increased the work and responsibility of the tariff commission.

"The Tariff Commission has undertaken an extensive investigation into the chemical industries because, among many reasons, the war has had a radical and far-reaching effect upon them. We have established a permanent division, to be known as the tariff information catalog. In this catalog we expect to have a file of information upon every important article entering into commerce. It will be our purpose to keep this tariff information catalog up to date, so that business men, members of the press and members of Congress can obtain, at any time, reliable and accurate information on any item in the tariff in which they may be particularly interested.

"Not only does the work of the tariff commission extend to the domestic, but also to the international aspect of the tariff. In the law creating the tariff commission, we were authorized to investigate the tariff relations between the United States and foreign countries, commercial treaties, preferential provisions and economic conference. The war has either swept away or made obsolete practically all of the commercial treaties of the world.

Fundamental Facts

"We are examining the fundamental concepts and facts of the commercial policy and treaty systems as they existed before August, 1914, in the Far East, Latin America, the British Empire, especially Canada; continental Europe and the United States. This investigation extends to the bargaining features of tariffs, the most-favored-nation clause in treaties; various tariff systems, commercial treaties and preferential arrangements, alliances and the conditions on which they are based, and, in general, a study of the economic conditions of the world as they relate to international tariff and commercial treaty problems.

"The most important work before the American people to-day is the vigorous prosecution of the war. Our answer to Germany's effort to use peace talk as a war measure is millions of men and billions of dollars for fighting. But we would be negligent if we were to leave all our after-the-war problems unconsidered until hostilities ceased. Other nations are not doing it. In time of war it is wise to get ready for peace.

"The Tariff Commission is a part of a program of economic preparedness. It takes time to prepare. At a time when every economic law is called into question and when the resources of the world are taxed as never before, it is fortunate for this country that a commission is considering scientifically the adjustment of our economic life to normal times."

It will be seen that the principles upon which the tariff commission is basing its procedure are opposed to any hasty revision of the tariff for the purpose of securing additional revenue at this time and especially to a horizontal increase similar to that which was projected in connection with the war revenue act but abandoned by the Senate Finance Committee after conferences with Chairman Taussig and his colleagues on the tariff commission.

W. L. C.

The Chicago warehouse of the Bridgeport Chain Co., Bridgeport, Conn., has been removed from 204 North Wabash Avenue to 119 South Jefferson Street.

PERSONAL

George M. Verity, president, American Rolling Mill Co., Middletown, Ohio, has been appointed by Governor James M. Cox a member of the Ohio State War Work Council. Mr. Verity, who has been at the head of the American Rolling Mill Co. since it was organized, is now serving as a member of three very important national associations directly or indirectly connected with war work. He is chairman of the Butler County Food Conservation of the United States Food Administration and a trustee of the Ohio Institute of Public Efficiency. In addition to these public self-imposed duties, he has taken a very prominent part in the two Liberty Loan campaigns and has worked equally as hard for the Red Cross, not confining his efforts in either case to his home city. He was a member of the entertainment committee at the recent meeting of the American Iron and Steel Institute, held at Cincinnati.



GEORGE M. VERITY

George W. Perks, formerly general manager of the American Seeding Machine Co., Springfield, Ohio, has succeeded A. P. Lohmann as chief engineer of the B. F. Goodrich Co., Akron, Ohio. Mr. Lohmann resigned to open an office in Akron as an advisory industrial engineer.

Robert J. Anderson has resigned as chief chemist and metallurgist of the Cleveland Metal Products Co., Cleveland, effective Feb. 1.

W. H. Scott, formerly vice-president and treasurer; A. E. Sugden, formerly secretary and sales manager, and L. C. Austin, formerly manager of the export department of the Pacific Hardware & Steel Co., have with L. A. Lamont, recently associated with Rolph, Mills & Co., established themselves in the steel products business under the firm name of Scott, Sugden & Lamont, with offices in the Monadnock Building, San Francisco; L. C. Smith Building, Seattle, and People's Gas Building, Chicago.

A. R. McCann, general manager of the recently organized Liberty Machine Tool Co., Hamilton, Ohio, is recovering from an operation performed last week for appendicitis.

Harry M. Cooley, factory superintendent Turner & Seymour Mfg. Co., Torrington, Conn., has been commissioned lieutenant in the Ordnance Department and will go to the base depot in France.

Major Weaver H. Rogers, well known in iron and steel circles and head of the firm of Weaver H. Rogers & Co., First National Bank Building, Pittsburgh, dealers in iron and steel, has for some months been devoting his entire time to the Government service at Washington, D. C., where he was assigned as head of the Iron and Steel Manufacturing Facilities Branch of the Production Section, Carriage Division, at Sixth and B Streets, N. W., in connection with Capt. H. W. Reed, a well known engineer of Philadelphia. Major Rogers was also delegated as representative of the Ordnance Department on certain special matters, and under his department has associated with him a number of well-known members of the iron and steel industry.

W. D. Crawford, formerly president of the La Belle Iron Works, Steubenville, Ohio, who retired from active business life several years ago, has gone to Florida for the winter.

The many friends of Wallace H. Rowe, president of the Pittsburgh Steel Co., Union Arcade Building, Pittsburgh, who has been dangerously ill for some

months, will be glad to know that he is showing great improvement, and, while not entirely out of danger, is in a fair way to complete recovery.

William C. Simcox has been appointed safety director of the General Fireproofing Co. of Youngstown, Ohio, a newly created department.

James A. Campbell, president of the Youngstown Sheet & Tube Co., and J. G. Butler, Jr., also of Youngstown, have been appointed members of the Ohio State War Council of the Salvation Army by Governor Cox.

G. M. Lawther, formerly with the Pittsburgh Gage & Supply Co. and later with the Colonial Supply Co., is now connected with the Pittsburgh office of the Biddle Purchasing Co. in the Ferguson Building in that city.

Col. H. P. Bope, vice-president and general manager of sales of the Carnegie Steel Co., Pittsburgh, recently delivered the first of a series of lectures in the St. Andrews Episcopal Church in that city, his subject having been "George Washington." Others in the series will be given as follows: Jan. 27, "Thomas Jefferson"; Feb. 24, "James Madison"; March 24, "John Marshall," and April 28, "Alexander Hamilton."

T. S. Disler has been appointed traffic manager of the Fort Pitt Steel Casting Co., McKeesport, Pa.

W. G. Costin, president of the Pittsburgh Screw & Bolt Co., Pittsburgh, has gone to Florida for the winter.

John C. Reed and Merwyn J. Hocker, electrical engineers of the Bethlehem Steel Co., Steelton, Pa., addressed the Association of Iron and Steel Electrical Engineers, at a meeting in Philadelphia, on Jan. 5, on "Electrically Operated Bridges."

A. N. Detweiler has joined the engineering staff of the Powdered Coal Engineering & Equipment Co., Chicago. He is a graduate of the Missouri School of Mines, University of Missouri, and was chemist for the National Zinc Co. at Bartlesville, Okla.; chemist for the Altoona Zinc Co., Altoona, Kan.; chemist for the Lenon-Starr Smelting Co., at Bartlesville, and in 1911 he became engineer for the Tribullion Mining, Smelting & Development Co., at Kelly, N. M. He was later superintendent for the company at Springfield, Ill., and in February, 1914, assumed complete charge of the local plant. In 1917 he resigned to undertake private investigations and to carry out studies jointly with C. C. Conover in inventing a process of recovering clay and slag from used retorts.

Russell T. Gray, formerly advertising manager for the Haynes Automobile Co. and more recently secretary of the Shuman Advertising Co., has been appointed advertising engineer for the Interstate Iron & Steel Co., First National Bank Building, Chicago.

P. L. Cooney, vice-president of the Link Belt Co., Chicago, has been elected a director of the Smith Motor Truck Corporation, New York.

Dr. Thomas G. Darlington, former health commissioner, New York, has been appointed director of sanitation by the American International Shipbuilding Corporation at Hog Island, near Philadelphia.

James Hartness, president Jones & Lamson Machine Co., Springfield, Vt., and past-president of the American Society of Mechanical Engineers, has been appointed a representative of that society to a joint conference in London, England, on the matter of standardization of aircraft production.

Charles Spalding, who has represented the Gisholt Machine Co., Madison, Wis., in the Detroit territory, resigned Jan. 1 and the company will henceforth be represented in Detroit by the Charles A. Strelinger Co., 43-51 Larned Street.

Herman Schneider, dean of the Engineering College, University of Cincinnati, has been appointed Director of the Industrial Section of the Ordnance Department, United States Army. He will make his headquarters in Washington, but will not sever his connection with

the University of Cincinnati and will remain the directing head of the Engineering College, returning at intervals to supervise the work of the college. Dean Schneider will have charge of the statistical and legal divisions, supplying and distribution of labor, housing of Government employees, plant organization, labor adjustments and women in industrial labor.

D. W. Dodge, Pacific Coast manager of the Koppel Sales Co., Inc., has just returned to San Francisco after a six weeks' absence in the East.

C. P. Coleman has been elected president of the Worthington Pump & Machinery Corporation, New York. Mr. Coleman was vice-president. The office of president had been vacant since the reorganization of the corporation a year or so ago.

John C. Haswell, president Dayton Malleable Iron Co., Dayton, Ohio, has been elected as a director of the Fourth National Bank, Dayton, succeeding the late John W. Stoddard.

George A. Lautz, who has been general manager of the Niagara Machine & Tool Works, Buffalo, for 27 years and president for about 10 years, will discontinue his active and financial connection with the firm about March 1. He will take a needed rest and has no other plans formulated.

D. Gleisen has been appointed manager of the industrial bearings division of the Hyatt Roller Bearing Co., Newark, N. J. Mr. Gleisen is a mechanical engineer, a graduate of Stevens Institute, and has been connected with the company for six years. He has recently been assistant manager of the Hyatt company in charge of bushings sales.

O. A. Wilkerson has been appointed general manager of the Steel Equipment Corporation, Avenel, N. J.

F. Frith Pickslay, of New York, has been appointed sales manager of the Farrell-Cheek Steel Foundry Co., Sandusky, Ohio.

Harry A. Reichenbach, Allentown, Pa., has resigned as efficiency engineer for the Bethlehem Steel Co. to accept a position with the Alpha Portland Cement Co. in a similar capacity. He is a graduate of Lehigh University.

L. H. Atkinson, president of Atkinson & Utech, Inc., New York, has just returned from a six weeks' business trip in Italy and France.

Robert L. Arms, for several years connected with the sales department of Manning, Maxwell & Moore, Inc., and the Sherritt & Stoer Co., Philadelphia, has become associated with the Monarch Machinery Co., 300 North Third Street, Philadelphia, as sales manager.

Changes in Philadelphia Machinery District

The Vandyck Churchill Co. announces that its Philadelphia office, C. H. Hamersley, manager, which for years has been located in The Bourse, will be removed to Suite 734, Widener Building, Jan. 15. The Vandyck Churchill Co. is another of the larger machine tool companies in Philadelphia to locate in the district adjacent to Broad and Chestnut streets. The Brown & Sharpe Mfg. Co. moved its office a few months ago. Other important concerns now located in that district are the W. E. Shipley Machinery Co., Morris Building; the Swind Machinery Co., Widener Building; the Sherritt & Stoer Co., Finance Building; Manning, Maxwell & Moore, Inc., Lincoln Building, and Joseph T. Ryerson & Son, Widener Building.

The Crocker-Wheeler Co., Ampere, N. J., has announced a bonus plan for employees receiving less than \$2,500 yearly. Under its terms they will receive not less than 10 per cent of their wages since Oct. 1, 1917, and those who have been in the employ of the company more than one year will receive 12 per cent. The plan will be continued in 1918 and is intended to meet unusual conditions incident to the war.

Exports Are Hampered by Embargoes

Effects of Unfavorable Conditions Reflected in Decreased Movement to Foreign Lands—Shipments of Iron and Steel for November Decline 15 Per Cent

Adverse conditions prevailing with respect to the general export movement in November are reflected in smaller totals in all classes of iron and steel shipments. Freight embargoes, lack of cargo space, stringent license requirements and fuel and labor shortages have all contributed in bringing about the downward movement, but inasmuch as these conditions are not indicative either of mill capacity or export orders, it is obvious that as soon as they improve there will be a prompt resumption of the upward tendency in foreign shipments.

The total exports of iron and steel by values in November gained a small fraction of 1 per cent over the same month of 1916, but declined heavily as compared with October of 1917 and fell 34 per cent short of the record total of June, 1916. Shipments of tonnage iron and steel declined 15 per cent as compared with November, 1916, and 26 per cent from the high water mark of September, 1916. The exports of machinery, which made a phenomenal record in October last, declined 34 per cent as compared with that month and gained less than ½ per cent over November, 1916. Shipments of machine tools showed an increase of but 2 per cent over November, 1916, and aggregated less than half the record total of May, 1916.

For the 11 months ended November, substantial gains were made in all classes except machine tools. The largest increase was recorded in total exports of iron and steel by values, which advanced 43 per cent over the shipments for the corresponding period of 1916, which in turn were more than double those of any previous year. Tonnage commodities gained 9

per cent over the 11 months of 1916, the total for which was never before approximated. Machinery gained 26 per cent over the corresponding period of 1916, which was 70 per cent in advance of the best previous record, but machine tools declined about 2 per cent from the level of the same period of 1916.

The value of all exports of iron and steel products in November was \$77,834,139 as compared with \$77,570,840 for the same month of 1916 and \$119,141,972 for June, 1917, which is the record total. For the eleven months of 1917 the aggregate was \$1,123,603,635 as compared with \$778,623,250 for the corresponding period of 1916 and \$342,575,685 in 1915. Exports of machinery in November were valued at \$19,098,213 as compared with \$18,999,400 for the same month a year ago. The exports in October of 1917, valued at \$28,488,426, hold the record. For the 11 months the exports of machinery were valued at \$257,344,350 as compared with \$205,234,317 for the same period of 1916. Shipments of metal-working machinery aggregated \$4,800,472 for November as against \$4,681,652 for the same month of 1916. For the 11 months of 1917, the machine tool exports totaled \$71,839,355 as against \$73,192,656 for the corresponding period of 1916. Details of the exports of machinery in November, 1916 and 1917, and for the two eleven-month periods are given in the accompanying table.

Exports of iron and steel for which quantities are given aggregated 473,929 gross tons in November, 1917, as compared with 554,858 and for the same month of 1916. The record total of tonnage commodities, 643,763 gross tons, was made in September, 1916. For the 11 months ended November, 1917, these shipments

Exports of Machinery	November		Eleven Months	
	1916	1917	1916	1917
Adding machines	\$94,335	\$287,874	\$1,264,717	\$2,169,209
Air-compressing machinery	66,471	161,235	773,254	1,026,694
Brewers' machinery	659	46,077	13,526	149,206
Cash registers	116,839	73,149	1,493,979	767,628
Parts of	8,373	7,236	130,205	72,881
Concrete mixers		a11,671		a117,334
Cotton gins	4,036	5,922	86,582	80,393
Cream separators	19,833	6,523	402,525	532,539
Elevators and elevator machinery	168,535	178,344	1,651,210	2,049,961
Electric locomotives	16,318	17,185	534,176	381,182
Gas engines, stationary	36,922	56,787	355,963	785,508
Gasoline engines	1,195,930	2,489,890	13,265,138	22,617,823
Kerosene engines		a377,369		a1,418,634
Steam engines	1,313,259	3,648,135	10,355,505	31,651,373
All other engines	208,010	134,809	4,546,953	3,344,274
Parts of	1,795,828		11,449,883	b9,287,245
Boilers		a223,536		a1,511,962
Boiler tubes		a586,372		a3,982,134
All other parts of engines		a1,122,912		a7,077,247
Excavating machinery		a139,481		a422,516
Milling machinery, flour and grist	72,352	38,338	1,976,639	716,969
Laundry machinery, power	18,644	37,466	273,172	404,566
All other	25,624	12,858	253,397	237,678
Lawn mowers	10,165	41,432	206,087	232,041
Metal-working machinery (including metal-working tools)	4,681,652		73,192,656	b44,604,259
Lathes		a1,083,449		a8,423,459
Other machine tools		a914,841		a4,437,658
Sharpening and grinding machines		a514,408		a2,797,720
All other metal-working machinery		a2,287,774		a11,576,259
Meters, gas and water	22,487	51,844	328,741	1,159,608
Mining machinery, oil well	159,352	433,088	1,815,191	1,577,705
All other	756,885	1,043,900	6,598,910	9,702,919
Paper mill machinery	137,968	83,173	1,031,139	1,724,503
Printing presses	133,775	84,424	1,753,218	1,460,953
Pumps and pumping machinery	590,052	679,321	5,146,966	5,779,523
Refrigerating and ice-making machinery	37,837	144,403	620,343	1,126,530
Road-making machinery		a109,313		a235,077
Sewing machines	430,624	819,639	5,027,761	7,391,677
Shoe machinery	67,557	90,595	957,076	1,476,636
Sugar-mill machinery	1,849,735	2,220,298	7,645,301	9,149,934
Textile machinery	356,830	431,465	3,212,311	3,510,547
Typesetting machines	74,525	123,909	1,034,060	1,175,392
Typewriting machines	908,529	733,242	9,941,544	8,720,322
Windmills	81,656	93,050	937,497	1,048,025
Wood-working machinery, saw-mill	63,712	80,554	416,740	571,248
All other	85,236	80,878	829,878	971,372
All other machinery and parts of	3,348,855	3,349,855	35,712,135	37,755,071
Total	\$18,999,400	\$19,098,213	\$205,234,317	\$257,344,350

aNot separately enumerated prior to July 1, 1917.
bSix months ending June 30, 1917.

aggregated 5,571,693 gross tons as against 5,523,143 for the same period of 1916. The accompanying table shows the exports for November and for the 11 months ended November, 1917, as compared with 1916:

	Exports of Iron and Steel			
	(November 1916 Gross Tons)	(November 1917 Gross Tons)	(Eleven Months 1916 Gross Tons)	(Eleven Months 1917 Gross Tons)
Pig iron	102,786	.....	507,046	377,094
Ferromanganese .....	.....	a112	.....	a4,657
Ferrosilicon .....	.....	a1,491	.....	a6,075
All other pig iron.....	.....	a24,140	.....	a200,886
Scrap	19,559	7,081	137,905	149,423
Bar iron	4,039	5,029	67,744	49,413
Wire rods	12,452	19,062	114,756	161,190
Steel bars	57,822	30,346	710,707	547,895
Billets, ingots and blooms, n.e.s.	125,038	150,120	1,345,826	1,827,484
Bolts and nuts.....	2,159	2,854	26,994	210,511
Hoops and bands....	3,548	4,200	40,963	51,533
Horseshoes	409	503	7,674	7,732
Cut nails	326	571	4,539	3,920
Wire nails	11,247	10,053	139,159	97,934
Wood screws .....	.....	a309	.....	a1,382
All other nails, including tacks	1,768	1,441	11,090	17,666
Cast-iron pipes and fittings	5,463	11,051	64,458	70,583
Wrought pipes and fittings	19,337	10,687	144,192	118,996
Radiators and cast-iron house heating boilers	121	98	2,226	4,771
Railroad spikes	1,289	1,974	22,461	19,894
Steel rails	55,022	39,250	499,224	461,703
Galvanized iron sheets and plates	6,900	7,314	76,567	79,504
All other iron sheets and plates	3,964	4,342	42,586	53,411
Steel plates	27,092	37,362	249,985	485,567
Steel sheets	7,426	13,148	95,528	133,587
Ship and tank plates, punched and shaped .....	.....	a2,260	.....	a12,081
Structural iron and steel	28,790	19,179	266,001	262,401
Tin and terne plates.	15,817	21,276	209,119	164,650
Barb wire	23,529	27,977	403,063	177,497
All other wire.....	18,955	20,699	249,033	185,381
Total.....	554,858	473,929	5,523,143	5,571,693

aNot separately enumerated prior to July 1, 1917.

Further Explanation of Scrap Prices

To obviate any misunderstanding of the explanations of the recommendations in regard to scrap material published in THE IRON AGE of Dec. 27, attention is called to an error in the statement made by a member of the Committee on Scrap Iron and Steel that No. 1 heavy melting steel may bring a price of \$31.00 a gross ton at any consuming mill in the United States, but not over this price. The figure should have been \$30.00, which is the maximum price that No. 1 heavy melting may bring. Any additional amount paid would be due either to a special charge for shearing or to the payment of a commission in special cases by the mill. The member of the Committee also says: "In regard to the special dispensation in the case of specification steel scrap whereby \$33.00 may be paid, it should be understood that the special charge of \$3.00 can only be paid in cases where larger material is actually cut to the specified sizes by request of purchaser. This is intended to cover the requirements of certain mills for hand-chargeable scrap, or for use in cupolas making semi-steel, and is not intended to cover material which is naturally of suitable size for such use. The special charge is supposed to appear as a separate item in addition to the price of the scrap."

Better Housing Conditions Planned for Steel Workers at Chicago

Housing conditions in the Calumet district have been criticized by the Illinois State Health Department, in consequence of which an investigation is being made by a committee of manufacturers, of which J. W. Lees, general superintendent of the Inland Steel Co., is chairman. An initial meeting of the committee was held last week. It is conceded by the manufacturers that some way must be found to better conditions under which the large number of workers in steel plants and munitions factories are working. Real estate operators cannot be interested at this time, and one suggestion is to build a cantonment for single men.

WITHERBEE, SHERMAN & CO.

Progress in 1917 at Ausable and Mineville Iron Ore Properties

Considerable new work has been under way in the past year at the Lake Champlain iron mines of Witherbee, Sherman & Co.

In the Ausable district the company was engaged in diamond drilling its low phosphorus ore body at Palmer Hill, Clinton County, N. Y., the past summer, and it is continuing this work through the winter with two drills operating. Seven holes have been finished and these determine the continuation of the ore body 2000 ft. beyond the outcrops and old workings. The old Palmer Hill workings have also been partly unwatered. The work is being done to obtain information to determine the best method of opening up and operating this ore body, which will yield an ore averaging 60 per cent iron and 0.010 phosphorus. The preliminary flow sheet and plans of a concentrating mill to handle this ore have already been made.

In its Mineville district the company completed last year and put in operation an addition to its No. 4 concentrating mill, which handles the low phosphorus ore from the Barton Hill mine. This addition will increase the capacity of the mill 35 per cent and will enable the Barton Hill mine to produce 1600 tons of ore a day.

A new double-track slope with 1000-ton pocket and 150-hp. hoist has been completed to open up the old workings of the New Bed body. This body is the continuation of the low phosphorus Barton Hill deposit.

The opening up and developing of the Sherman mine and of the Smith (Cook) mine was carried on throughout the year. Both of these mines are now operating with a small output.

The usual development and extension of slopes to keep ahead of operating have been carried on in the Old Bed, Harmony and New Bed mines.

Four new "dry" or change houses were built during the year, equipped with lockers, showers and washing facilities. Three of these are constructed of concrete blocks and will accommodate 400 men each. One is built of concrete and wood and will accommodate 200 men. New houses of wood and concrete blocks have been completed, providing accommodation for 100 additional families. Sprinkler systems with new water supply and reservoirs have been installed in all the company's shops, warehouses, power plants and concentrating mills.

A dedusting scheme has been worked out and is now being installed in No. 3 concentrating mill for clarifying the air and removing the fine dust from the interior of the mill.

The company has been experimenting for several years on the use of the high phosphorus tailings from its Old Bed ores as a fertilizer. Good success has been obtained from the mixture of this material with barium sulphide, and a new mill is now being built to enrich the phosphorus content in the run of mill tailings. This mill will have a capacity of 75 tons of concentrates a day and it is expected will be in operation by April 1.

Steel Shortage in Canada

The War Committee of the Canadian Cabinet has been in conference at Ottawa, Ont., with representatives of steel manufacturers, the railway companies of Canada and the Imperial Munitions Board, in reference to the shortage of iron and steel supplies for industrial, munitions and railway purposes in Canada. The Canadian output of iron and steel has been greatly speeded up during the past few years, but the demands of munitions manufacture, railway requirements, etc., coupled with the restrictions of imports from the United States, have steadily exceeded the supply. At the conference plans were discussed for co-ordinating supplies as far as possible to relative necessities. The Canadian Government has under consideration plans for increasing the iron and steel output in the Dominion.

STOPS NIGHT WORK

Bridgeport Company Reduces Output—Westinghouse Force Dismissed

The Remington Arms Union Metallic Cartridge Co. has laid off its night shift of 2500 men at its Bridgeport, Conn., rifle plant. The reason is given in the following statement of the company:

The conditions in Russia are such that payment on contracts in process of execution in the United States are seriously curtailed. This is true with the contracts between this company and the former Russian government, and the situation has become so acute that a large reduction of daily output of Russian rifles has become imperative.

It is necessary at once to discontinue the night shift heretofore working upon Russian rifles and to dismiss such of the employees of this night shift as cannot be given employment on the day shift.

The company anticipates in the early spring using an even larger number of employees than are engaged at present, after the completion of the special tool equipment necessary to the manufacture of supplies for the United States Government.

The Remington Bridgeport works are now engaged in the manufacture of the heavy type of Browning machine gun on a government contract. Following the announcement that 2500 men would be laid off, there was hurriedly called a meeting of the Manufacturers' Association of Fairfield County, which includes most of the large industries in Bridgeport, to devise ways and means to keep the men in the city, as shortly there will be a demand for more than the number laid off. The Liberty Ordnance Co. is expecting increased government orders which will mean the doubling of its working force, and the Bullard Engineering Works will take on 1000 or more at its new gun plant, which is fast approaching completion. It is expected that a considerable number will also be taken on at once by the Singer Mfg. Co. and the Bridgeport Brass Co.

New England Westinghouse Cuts Force

As a result of the cancellation of contracts for the manufacture of Russian rifles, the New England Westinghouse Co., with two plants at Chicopee Falls and one at East Springfield, Mass., will decrease its working force from 7500 employees to about 4500. The government has just given the company a substantial contract, reported to be for 20,000 heavy-type Browning guns. Through an arrangement made with the British Government, the manufacture of Russian rifles will be continued on a reduced scale until the change necessary to make Browning guns has been effected. This will prevent disruption of the entire working force. The greatest reduction will be made at the Hill plant, formerly the J. Stevens Arms Co., which will return to the manufacture of sporting rifles. The Browning gun will be made at the River plant, at Chicopee Falls, and at the East Springfield plant. It is expected that only a small number of the 3000 men who will be gradually laid off will be able to find employment locally.

The Scovill Mfg. Co., Waterbury, Conn., now employing 13,000 men, will soon take on several thousand more employees, according to a statement made by John H. Goss at a recent session of the Waterbury Rent Commission. Plans have been filed for three large additions to the plant, including a factory addition, a reclaiming plant and a storehouse.

The Manufacturers' Light & Heat Co., Pittsburgh, distributor of natural gas, on Jan. 1 cancelled all its contracts with industrial concerns in the Pittsburgh district, but it will continue to supply gas to such concerns at former rates and in such quantities as it may be able to furnish after supplying its private consumers. Whatever gas may be available will be sold to manufacturing concerns, those having Government contracts to be given the preference.

IRON AND INDUSTRIAL STOCKS

Activity in Sales—Move to Suspend Anti-Trust Suits Reassuring—Steel Stocks Show No Definite Trend

NEW YORK, Jan. 8.

A sharp awakening in the demand for industrial stocks followed last week immediately upon the enhancement of rail values by the President's proclamation. Prices advanced for three days and on Friday and Saturday receded in some cases under influence of sales by profit-takers. The action of the Department of Justice to seek postponement of Government anti-trust suits against the United States Steel Corporation, the International Harvester Co., United Shoe Machinery Co., and other big steel and industrial corporations, so far as it was construed to indicate a realization on the part of the Administration that it must in war times co-operate with business interests, served in considerable measure to add strength to the stock market.

In line with the upward trend of values United States Steel, com., advanced $4\frac{1}{2}$ points and pref., $3\frac{3}{4}$; Bethlehem Steel, com., $7\frac{3}{4}$ and Class B, $4\frac{1}{2}$; Midvale Steel, com., $3\frac{1}{2}$, but American Car & Foundry, com., fell off $\frac{1}{2}$ point; Lackawanna Steel, com., $\frac{1}{2}$ point; Republic Iron and Steel, com., 1 point.

The range of prices on active iron and industrial stocks from Wednesday of last week to Tuesday of this week was as follows:

Allis-Chalm. com.	18 $\frac{1}{2}$ - 21	Int. Har. of N.	
Allis-Chalm. pf.	72 $\frac{1}{4}$ - 76	J. pf.	107 - 109 $\frac{1}{2}$
Am. Can. com.	37 $\frac{3}{4}$ - 41 $\frac{1}{2}$	Int. Har. Corp.	
Am. Can. pf.	90 - 90 $\frac{1}{2}$	com.	59 - 60
Am. Car & Fdry.		Lacka. Steel	74 $\frac{3}{4}$ - 81
com.	69 - 73	Lake Sup. Corp.	12 $\frac{1}{2}$ - 14
Am. Car & Fdry.		Midvale Steel	44 $\frac{1}{2}$ - 48 $\frac{1}{2}$
pf.	106 - 107	Nat.-Acme	26 $\frac{3}{4}$ - 27 $\frac{1}{4}$
Am. Loco. com.	55 $\frac{1}{4}$ - 58 $\frac{1}{2}$	Nat. En. & Stm.	
Am. Loco. pf.	95 - 96 $\frac{1}{2}$	com.	37 $\frac{1}{4}$ - 40 $\frac{1}{2}$
Am. Radi. com.	252	Nat. En. & Stm.	
Am. Ship com.	89 - 90	pf.	96
Am. Ship pf.	90	N. Y. Air Brake	118 - 125
Am. Steel Fdries.	60 - 63	Nova Scotia Stl.	68 - 69
Bald. Loco. com.	59 - 62 $\frac{3}{4}$	Pitts. Steel pf.	95
Bald. Loco. pf.	93 - 96	Press. Steel com.	59 $\frac{3}{4}$ - 62 $\frac{1}{4}$
Beth. Steel com.	76 $\frac{1}{4}$ - 83 $\frac{1}{4}$	Press. Steel pf.	95 - 96
Beth. Stl., Cl. B.	75 $\frac{1}{4}$ - 83 $\frac{1}{4}$	Ry. Stl. Spr. com.	45 $\frac{1}{2}$ - 48 $\frac{3}{4}$
Beth. Steel pf.	90 - 90 $\frac{1}{2}$	Ry. Stl. Spr. pf.	95
Cambria Steel	115	Republic com.	76 - 82 $\frac{1}{2}$
Carbon Steel	77 - 80	Republic pf.	92 $\frac{3}{4}$ - 94 $\frac{1}{2}$
Case (J. I.) pf.	74 - 76	Sloss com.	40 - 42 $\frac{1}{2}$
Cent. Fdry. com.	30 - 35	Superior Steel	37 - 40
Cent. Fdry. pf.	41 - 46	Transue-Wms.	40 - 40 $\frac{1}{2}$
Chic. Pn. Tool.	47 $\frac{1}{2}$ - 51 $\frac{1}{4}$	Un. Al. Steel.	37 - 39 $\frac{1}{2}$
Colo. Fuel	35 $\frac{1}{2}$ - 39 $\frac{1}{4}$	U. S. Pipe com.	12 - 13 $\frac{1}{2}$
Cruc. Steel com.	52 $\frac{1}{2}$ - 59	U. S. Pipe pf.	44
Cruc. Steel pf.	90	U. S. Steel com.	91 $\frac{1}{2}$ - 98
Gen. Electric	127 $\frac{1}{4}$ - 138 $\frac{3}{4}$	U. S. Steel pf.	108 $\frac{3}{4}$ - 110 $\frac{1}{4}$
Gt. No. Ore Cert.	26 $\frac{1}{4}$ - 28 $\frac{3}{4}$	Va. I. C. & Coke	50 - 55
Gulf States Steel	91 - 96 $\frac{1}{2}$	Warwick	8 - 8 $\frac{1}{2}$
Int. Har. of N.		Westingh. Elec.	39 - 43 $\frac{1}{2}$
J. com.	111 $\frac{1}{2}$ - 120		

Dividends

The Detroit Steel Products Co., $3\frac{1}{2}$ per cent on the preferred, payable Jan. 2.

The Midvale Steel & Ordnance Co., quarterly, \$1.50, payable Feb. 1.

The Pittsburgh Steel Co., quarterly, 2 per cent and special 20 per cent on the common, payable Jan. 2.

The Standard Underground Cable Co., quarterly, 3 per cent, extra $3\frac{1}{2}$ per cent and special 3 per cent, payable Jan. 10.

The Trussed Concrete Steel Co., quarterly, 4 per cent on the common, payable Jan. 15.

The United Alloy Steel Co., quarterly, \$1, payable Jan. 21.

The Nova Scotia Steel & Coal Co., semi-annual, $2\frac{1}{2}$ per cent on the common and 2 per cent on the preferred, payable Jan. 15.

The Sharon Steel Hoop Co., quarterly, 2 per cent, payable Jan. 10.

The Westinghouse Air Brake Co., quarterly, $87\frac{1}{2}$ c., payable Jan. 21.

The Wheeling Mold & Foundry Co., quarterly, 2 per cent on the preferred, payable Jan. 1.

The offices of J. J. Nordman & Co., purchasing agents for foreign account, have been removed to rooms 2211-2212, Farmers Bank Building, Pittsburgh.

The main shop of the Belle City Malleable Iron Co., Racine, Wis., was damaged by fire Saturday night. Loss about \$100,000.

Urge Use of Domestic Manganese Ores

The following resolution has been prepared by the War Minerals Committee and submitted by it to the board of directors of the American Institute of Mining Engineers, asking that it be passed by the board and used to the best advantage to secure the end desired:

Whereas, the steel industry of the United States is almost entirely dependent on the importation of foreign manganese ores, the consumption of which for the year 1918, it is estimated, will exceed 850,000 tons; and

Whereas, the ships now engaged in transportation, especially from Brazil, are needed with ever increasing urgency for supplying our Army and Navy forces abroad; and

Whereas, much shipping may be spared from manganese transportation and the domestic sources of manganese may be utilized, provided the steel manufacturers of the United States will co-operate to this end by taking advantage of the possibility, in open-hearth and Bessemer practice, of so-called residual manganese, and by using spiegeleisen instead of ferromanganese, thereby following the example already set by three large and prominent steel producers;

Be it resolved, that the board of directors of the American Institute of Mining Engineers urges the steel manufacturers of America, for patriotic reasons, to give immediate consideration to the development and utilization of domestic manganese ores; to use no ferromanganese, except for the manufacture of grades of steel below 0.15 per cent carbon, to use domestic ores whenever possible in place of the high grade imported ores; and to urge their associates and colleagues, in this and other possible ways, to vie with one another in releasing ships for importation of any materials that cannot be secured or produced in this country.

New Gun Plant of the Tacony Ordnance Corporation

The Tacony Ordnance Corporation is rapidly completing extensive and modern facilities for the production of large caliber, rough machined gun forgings. The plant, which will cover approximately 22 acres at Tacony, Philadelphia, will be completed about March 1, 1918. Present plans call for the following buildings; open hearth, and stockyard, forge, heat treatment, machine shop, chemical, physical and microscopic laboratory, storehouse, dispensary and administration building.

The open hearth, which will have a capacity of from 700 to 800 tons of ordnance ingots per week, will operate two 40-ton acid, oil-burning furnaces, with 3½-ton charging machine, cranes, oil storage tanks, etc. A 2000-ton and a 1000-ton steam hydraulic forging press, with heating furnaces, etc., will furnish ample forging capacity. In the heat treatment department there will be three vertical quenching and 3 car bottom furnaces with necessary pyrometric control and dipping cranes. The machine shop will house about 50 machine tools, including a number of 48-in. and 36-in. turning and boring lathes, shapers, planers, etc. A small but complete tool room will be maintained.

The new plant will be devoted exclusively to the production of rough machined forgings for howitzers and guns for the United States Army. About 500 to 600 employees will be required to operate the plant at capacity. J. B. Warren, secretary and manager of the Tacony Steel Co., is president of the Tacony Ordnance Corporation and George Satterthwaite, formerly general superintendent of Midvale Steel Co., is vice-president and general manager.

The A. M. Byers Co., Pittsburgh, manufacturer of pure wrought iron pipe, announces changes in its organization effective from Jan. 1 as follows: L. M. Johnston has been made second vice-president, W. W. Williams, general manager; C. L. Jamison, secretary and treasurer, and T. L. Lewis, general sales manager.

Lake Superior Ore Shipments by Water

Total Lake Superior iron ore shipments by water during 1917 were 62,654,726 gross tons as compared with 64,898,583 tons in 1916, according to official figures prepared by the Lake Superior Iron Ore Association. These include, in addition to the shipments from the American ports given in THE IRON AGE Dec. 20, 159,825 tons shipped from Michipicoten, Ont. In 1916 159,100 tons were shipped from this port, and in that year 5285 tons were shipped from Key Harbor, Ont., which made no shipments last year.

Receipts at Lake Erie ports during 1917 amounted to 48,394,708 tons as compared with 51,381,693 tons during 1916. Receipts at Lake Erie ports during the season were as follows:

Buffalo and Tonawanda.....	8,037,842
Erie	2,079,227
Conneaut	8,729,754
Ashtabula	10,251,304
Fairport	2,311,179
Cleveland	9,077,161
Lorain	3,831,244
Huron	1,631,395
Toledo	2,445,602

Receipts at other than Lake Erie ports during 1917 were 13,530,168 tons as compared with 12,982,630 tons during 1916. More than one-half of this tonnage was received at South Chicago. Receipts at ports other than Lake Erie during the season were as follows:

Detroit	418,151
Indiana Harbor	900,692
Gary	3,883,082
South Chicago	7,030,174
Milwaukee	224,570
Boyne City	44,437
East Jordan	35,792
Sault Ste. Marie, Ont.....	653,098
Point Edward, Ont.....	328,774
Deeronto, Ont.	11,400

Receipts at Lake front furnaces at Lake Erie ports during the season were 9,107,816 tons as compared with 9,778,620 tons during 1916.

San Francisco Plants Closed by Strike

With few exceptions, 160 plants and machine shops in San Francisco and vicinity are closed and 40 foundries are closed as the result of the strike which became effective Dec. 26, following the refusal of the California Metal Trades Association and the California Foundrymen's Association to grant the increase demanded by the Iron Trades Council. The number of men on strike is estimated by the employers to be about 10,000. The Iron Trades Council estimates a somewhat smaller number of men are out. All work in the iron and steel trade, not directly for Government use, has come to an end. Federal Mediator Mortimer Fleishacker has held several conferences in the hope of settling the strike, but so far both sides have remained firm.

The strike was brought about by the action of the Shipping Board in recommending that a 10 per cent bonus be paid to iron workers of shipyards working on Government business.

Corporation Stock for Employees

The United States Steel Corporation announced last week that the 50,000 shares of common stock which is to be offered to employees this year may be purchased by them at \$92 a share. This announcement was made when the stock was selling at 93. Shortly afterward it rose on heavy trading to 96½, and closed at 95½, a net advance for the day of 5 points. At the beginning of 1917 employees subscribed for a total of 67,611 shares at \$107 a share. The record year for subscriptions was in 1914, when both the preferred and common stocks were offered, the former at 105 and the latter at 57. Over 91,000 shares were subscribed for by 46,800 employees that year.

Active Year for the Bureau of Standards

Research Along Metallurgical and Engineering Lines— Important Inquiry in Regard to Machine Tools— Working in Co-operation with Military Departments

WASHINGTON, Jan. 8.—Unprecedented activity along metallurgical and engineering lines has marked the work of the Bureau of Standards during the past year, according to the annual report of Director Stratton. The subjects of investigation have included failures in railway material, including rails and chilled car wheels, various phases of ingot testing, effects of oxides and gases in steel, gun erosion and allied phenomena, temperature measurements in metallurgical practice, failure of brasses and bronzes, mechanical properties of foundry sands, protective metallic coatings on metals, cutting action of machine tools, strength of wire rope, and many other problems arising in the production and use of iron and steel and other metals.

Railroad Materials Investigations

The main outstanding rail problem from the standpoint of safety in railroad practice is that of the prevention of transverse fissures. The work of the past year has been directed in a number of ways toward the determination of the nature and causes of such fissures. A number of fissured rails furnished by various railway companies have been thoroughly studied and reported to the companies; the investigation included physical, chemical and metallographic examination.

More work has been done on the distribution of temperature in cooling rails of different sections, as throwing light upon the behavior of rails upon the hot beds. A study has been made of the steel at various parts of the head of fissured and normal rails in order to detect any evidences of lack of thermal equilibrium (delayed transformation) which might account for the brittleness usually associated with the steel at the center of the head of fissured rails. This study included determinations of density, thermal analysis, and microscopic examination. Determination of the coefficients of thermal expansion at various locations near a fissure has failed to indicate any significant variations.

Chilled Car-Wheel Investigation

Measurement has been made of the stresses developed in the plate of the three standard master car builders' wheels (625, 675 and 724 lb.) by heating of the rim or tread of the wheel. Such heating in service is produced by the friction of the brake shoe on the wheel tread and leads to numerous wheel failures by the cracking of the plate. The present investigation will furnish information regarding the magnitude and distribution of such stresses in different weights and designs of wheels and should be a basis for rational alterations in such weights or design as may later be undertaken through the proper associations. Stresses were produced in these tests equal to 20,000 to 24,000 lb. per sq. in.; these are close to the ultimate breaking strength of the cast-iron of the wheel plate.

Iron-Carbon System

Several ingots of pure iron and of iron-carbon alloys have been cast in the new large vacuum furnace. These ingots have been forged, rolled, or drawn into shape for various physical measurements and supplied to other divisions of the bureau or to outside laboratories for tests. Further thermal analyses have been made of the various carbon compositions. After the furnaces and transformer are moved to the new chemistry building it is hoped that greater progress may be made in this work, and that several new phases may be taken up, including a study of the equilibria of systems other than the iron-carbon one. In this manner the effect on steel of different elements, such as sulphur, manga-

nese and phosphorus, may be studied under ideal conditions, including the elimination of the elements not being studied.

Ingot Investigations

The results of the tests made in co-operation with the Pennsylvania Railroad of rails manufactured from different types of ingots are in shape for the preparation of a published report. The results include determination of physical properties, microstructure, segregation, etc., and indicate the effect of type of ingot upon the finished rail. Work is being continued in co-operation with the chemical division, with a view to determining the best form of test ingot, as well as the amount of segregation which may be expected in steel ingots.

Gases and Oxides in Steel

The work on gases and oxides in steel should be extended as soon as the analytical methods are sufficiently adequate to include a thorough investigation of the effect of these impurities on the properties of steel. This will include also a study of the effect and efficiency of various commercial deoxidizers for steel.

In pursuance of a plan to investigate sources of error in present methods for determining gases in steel and to originate new methods, if needed, the Goutal method was made the subject of study. This method consists in dissolving the steel in a solution of copper-potassium chloride in an apparatus which permits the gases given off during solution to be absorbed. Contrary to Goutal's conclusions, it has been found that the gas content thus obtained is an entirely fictitious one so far as concerns carbon monoxide and carbon dioxide, since these gases are generated by the oxidizing action of the cupric salt on the carbides present, and there is, therefore, no relation between the observed percentage of these gases and the amount actually present in the metal. A paper on this subject is in course of preparation.

Gun Erosion and Allied Phenomena

The Bureau has been asked by the War Department for information concerning certain aspects of the gun erosion problem, and therefore has undertaken a preliminary laboratory investigation of the behavior of metals when very quickly cooled from high temperatures. It is believed that practical field investigation of this problem can be much aided by a laboratory study of those properties of different metallic materials which are concerned in their service behavior in the form of gun linings. This will involve a study of certain properties of these materials at high temperatures.

Foundry Sands

Comparison has been made of the mechanical properties of fine French facing sands and of American ones used as substitutes for these. It has been shown that one or two American sands are equal to the imported French sands in every respect except that of tensile strength. Samples made up of the various sands have indicated that the tensile strength of the French sands is superior to that of the American ones.

Machine-Tool Investigations

An important investigation has recently been inaugurated in co-operation with the research committee of the American Society of Mechanical Engineers on the cutting action of machine tools. It is intended to study exhaustively the manner of chip formation as well as the power consumed in the cutting of metals. This is an investigation of exceedingly broad scope and will require considerable time before any definite results

can be obtained. There is at present practically no literature on the subject which might be used as a guide in outlining such an investigation. It is proposed to study different types of tools, different angles of the cutting tools, and different grades of steels for use in these tools. The bureau some time ago purchased a planer dynamometer for this investigation, but the work has been delayed, as no suitable planer was available. During the past year an 8-ft. by 25-ft. planer has been installed and work is now in progress.

Investigation of Wire Rope

The report on the investigation of the strength of other physical properties of wire rope has been submitted for publication. This report contains a review of individual tests made upon 275 wire ropes ranging in diameters from $\frac{1}{4}$ in. to $3\frac{1}{4}$ in., inclusive; also numerous supplementary tests of wires, fibers in the hemp cores, lubricants and preservatives used in the manufacture of the rope. The investigation covered five of the more important and commonly used classes of American wire rope.

A co-operative investigation was made with a prominent bridge construction corporation to determine the effects of sheaves upon the tensile strength of steel hoisting rope. The specimens were tested under conditions approximating those existing in the case of hoisting blocks of derricks and dredges for comparison with direct tensile tests. The results of the tests showed that the sheaves reduced the strength in some cases as much as 25 per cent, this depending upon the diameter of the sheaves, which ranged from 10 to 18 inches. The report of these tests has been submitted for publication, and it is believed will be of value to engineering, construction and erecting firms.

Co-operation with Military Departments

One of the features of the work of the metallurgical division has been its greatly increased contact during the last year, and particularly during the past three months, with the military Government departments. The bureau is co-operating with the Bureau of Construction and Repair of the Navy Department and the Signal Corps of the War Department in an extensive investigation of light aluminum alloys for rolling and casting. It is hoped that alloys may be developed of greater specific mass tenacity than those at present in use.

A feature of the work of the metallurgical division has been its method of co-operation with technical societies or industries in the prosecution of its investigational work. In this manner the work it undertakes may proceed upon the very broadest lines and with full pertinence to industrial practice.

SHIP PROGRAM FOR CANADA

New Administration Preparing to Expend \$50,000,000 on Ocean-Going Vessels

TORONTO, ONT., Jan. 7.—An ambitious program of national shipbuilding is to be carried out in Canada as a policy of the new Union Government. This matter for some time has been under consideration, and Hon. C. C. Ballantyne, Minister of Marine and Fisheries, has outlined plans designed to utilize to the fullest capacity Canadian yards and establish rolling mills as essential to the industry. Mr. Ballantyne stated that the Canadian Government has reached a decision to utilize the full capacity of existing shipyards in the Dominion in the production of modern steel cargo steamers of the most approved types for the use of the government and for registry in Canada.

The productive capacity of these yards, which are at present engaged in the construction of ships for the British Government, local interests and for foreign account—the latter almost exclusively for Norwegian interests—may be roughly estimated at from 275,000 to 300,000 tons annually. During the continuance of the war and for some time thereafter the construction

of steel ships in Canadian yards for foreign registry will not be permitted. This policy is in line with that adopted by both the United States and Great Britain.

Government Ownership

The program set forth by C. C. Ballantyne, Minister of Marine and Fisheries, involves a further step towards government ownership. The shipbuilding program will mean an expenditure of from \$50,000,000 to \$60,000,000 per year on ocean-going cargo vessels, to be built, owned and operated by the Canadian Government. It may be that for a time the new vessels will be chartered to responsible persons, the rate to be regulated by the government, but after the war the vessels will form the connecting link between the Canadian Government railways and the European markets.

For the present, existing shipyards will be utilized. These include Vickers, Montreal; the Geo. Davies Co., Levis, Que.; the Polson Iron Works, Toronto; the Collingwood Shipbuilding Co., Collingwood, Ont.; the Port Arthur Drydock & Shipbuilding Co., Port Arthur, Ont., and the yards on the Pacific coast. Ships already contracted for by the Imperial Munitions Board and now under construction for Great Britain will be completed. Thereafter the Canadian yards will build for Canada and nobody else. The capacity of the yards will be increased by careful and economic distribution of labor. The Naval Constructors' branch of the Department of Marine and Fisheries is busily engaged in the development of the details of the contemplated program.

Ships Being Built in Canada

Shipbuilding in Canada is showing greater progress at the present time than ever before in the country's history. New companies continue to be incorporated, backed by many millions of dollars. Since 1914 upwards of 20 large companies have been organized and are now operating plants throughout the Dominion, and the number of ships turned out constitutes a record for Canadian shipbuilding. At the present time there are 107 ships under construction in the Canadian shipyards; of these 44 are being constructed on the Atlantic coast, 18 on the Pacific coast and 45 on the Great Lakes. These represent a tonnage of 155,691. In addition to these, a number of orders have been placed with shipbuilding concerns on the Pacific coast for additional steel freighters.

The Dominion Shipbuilding Co., Ltd., Toronto, which was recently incorporated, has leased, for a term of 21 years, slightly over 15 acres of reclaimed landing, extending along the waterfront from Spadina Avenue to Bathurst Street, Toronto. Work has been started on the erection of a shipbuilding plant, the largest building being 800 x 100 ft. Five shipbuilding berths, capable of taking ships of canal size, that is up to 261 ft. in length by 43 ft. beam, are being erected. The plant will cost \$2,000,000. L. Dahlgren will be vice-president and general manager of the company. When the plant is completed work will be commenced on the construction of six steel freighters, which will have a deadweight carrying capacity of 3,500 tons.

The Yale & Towne Mfg. Co., New York, has 190 of its men in the national service, headed by the president of the company, Major Walter C. Allen, who is now in France. The company also reports the following war subscriptions: First Liberty Loan, \$100,000 by company and \$107,000 by employees; second Liberty Loan, \$500,000 by company and \$209,550 by employees; Red Cross fund, \$7,500 by company and \$8827 by employees; Y. M. C. A. fund, \$2,500 by company; \$1,365.36 by employees.

The Iron & Fuel Trading Co., First National Bank Bldg., Pittsburgh, has secured the exclusive agency in the United States for all the dolomite material made by the Kelley Island Lime & Transport Co., Cleveland, which makes about 600 tons of roasted dolomite per day, and the Iron & Fuel Trading Co. is in position to quote on this material for prompt shipment.

Further Government Control of Steel

An Effort to Make the Pomerene Bill a
Law Before April 1—The Situation as
to Merchant Pig Iron and Iron Ore

WASHINGTON, Jan. 8.—Following a conference with President Wilson on the subject of the pending bill providing for Government control of the output of the iron and steel industry, Senator Pomerene, the author of the measure, is planning to urge it upon the attention of the Senate Committee on Interstate Commerce, of which he is a member, and expresses the hope that it will become a law before the present voluntary arrangement concerning prices expires on March 31. In view of the fact that the committee will also have before it the administration's measures for Government control of the railroads, Senator Pomerene may have some difficulty in securing early consideration, but the railroad legislation will probably occupy the committee but a few days and ample time will remain, he believes, to perfect his measure and put it through both houses before it is necessary to revise the existing schedule of controlled prices.

Steel Control Like That of Food and Fuel

It is probable that Senator Pomerene will suggest to the Senate Committee certain modifications of his bill with a view to making more specific the provision concerning the agency that is to control the industry, should the measure become a law. He is of the opinion that the bill should provide specifically that such agency shall be selected by the President, as was done in the case of the food and fuel administrators. This arrangement Senator Pomerene regards as more satisfactory than to delegate the authority to any existing commission or other agency. With respect to the necessity for legislation such as is embraced in his bill Senator Pomerene takes the position that the present arrangement is but a temporary expedient and that the interests of the country should not depend upon a merely voluntary agreement. In this connection he said to the correspondent of THE IRON AGE:

"I am simply contending for one principle by this legislation. Every man who is disposed to be fair-minded must recognize the fact that there were no sound economic reasons why the price of pig iron in the course of a few months should be advanced from \$12 or \$15 to \$50 or \$56 per ton, nor to the increases in the price of steel during the same period which were relatively as great, if not greater, than the price of pig iron. What I desire is not only the prosperity of the iron and steel men, but the prosperity of every one else who is dependent upon them for raw material.

"Men whose vision is not absolutely controlled by their selfish interests must conclude that a continuance of these exorbitantly high prices which have existed during the last year would result in crippling every industry which is dependent upon iron and steel producers for its material. It is claimed by those who are opposed to this legislation that the law of supply and demand will be sufficient to regulate prices. They must know that the law of supply and demand does not now control prices. It is not permitted to operate, and the producers have been taking advantage of the present state of the public mind to advance their prices, and the only limitation upon these prices is that fixed by their own desires.

"It seems to me that it ought to require no argument to convince reasonable men that it is unpatriotic and unsound economically to charge our Government four or five times what is a reasonable price for iron and steel, for to permit this to be done is to hamper the war power of the Government, and therefore indirectly benefit our enemies.

The Position of Manufacturing Consumers

"The same may also be said of the private consumer. To illustrate: If the manufacturer of agricultural

implements must pay four or five times as much for iron or steel as he ought to pay it will cripple his industry and prevent him from furnishing finished implements to the farmer, and thus indirectly affect our food supply. [The present price of agricultural bars is less than twice what it has often been in ordinary times.—EDITOR.] When men cease to be content with reasonable profits in time of war they become profiteers of a most offensive character. They cease to be public benefactors, and it would be a strange thing if the Government were to sit silently by and permit this course to be pursued when it is within the power of Congress to prevent it.

"As to whether consumers are being fairly treated under the present temporary arrangement, I think they are better treated than they were before, but there is no assurance that the present conditions will continue. They are not based on any law. My belief, however, is that the present controlled prices are somewhat too high, but, necessarily, prices cannot be determined by a legislative body. They must be left to an administrator or, in other words, to the executive branch of the Government, because changes are constantly occurring which affect the cost, both of labor and material."

President's Position Not Known

No plans have yet been made for further hearings before the Senate Committee, and it is not known whether additional witnesses will be called. There is some opposition to the consideration of the bill on the ground that the necessities of the situation are now being fairly met by the agreement between the War Industries Board and the steel committee. As yet the President has not intimated how he feels about the measure, but it is probable that any recommendation he may make, should he decide to express an opinion, will be very influential in both houses.

Merchant Pig Iron Costs

Officials of the Federal Trade Commission are much interested in statements attributed to certain merchant pig-iron producers indicating that these producers assume that the cost findings for pig iron presented to the War Industries Board prior to the recent extension by the President of the September schedule of controlled steel prices were made up by averaging the costs of the big steel companies with those of the merchant furnaces. The commission is aware that this misapprehension existed in the minds of the merchant furnace men who came to Washington before the President's proclamation was issued to take part in the conference at the commission's headquarters concerning the data to be submitted to the War Industries Board. On that occasion, however, it was pointed out by the commission's experts that great care had been exercised in differentiating the costs of the big fully integrated concerns from those of the merchant furnaces and that separate tabulations were made which included figures presenting the details in all the principal producing districts. At least one prominent representative of the merchant furnaces made an extended argument at the conference urging the commission not to merge or average the cost figures of the big concerns with the merchant furnaces but was immediately informed that the commission had been careful not to adopt any such erroneous method.

To Stimulate Output of Small Producer

While officials of the commission continue to emphasize the fact that its function is one of cost finding and not of price fixing they also emphasize their purpose to co-operate with the War Industries Board in stimulating production and point out that this must

necessarily involve the fullest possible protection to the interests of the small producer. At the same time they draw attention to the fact that a line must be established between a price schedule that will secure the largest production which can reasonably be hoped for and one which would show a profit for every small producer in the country, no matter how disadvantageously he might be located nor how uneconomically his operations might be conducted. There are a few producers, the officials assert, who, according to sound economics, have no business to be making iron or steel, who could not operate at all in normal times and who are now seeking to take advantage of the Government's control of the situation to force a scale of prices that would be unfair to consumers, both Governmental and private, and that as applied to output of the big producers would yield enormous and wholly unwarranted profits. To differentiate between this class of producers who, in the commission's opinion, are not entitled to special consideration, and the great bulk of small manufacturers whose co-operation is necessary to secure maximum production, is admittedly a difficult task; nevertheless this is the aim which the commission keeps constantly before it.

Excessive Coke Prices

Numerous complaints have reached the commission with respect to the prices at which spot coke is being sold and concerning deliveries on contracts. It has been found almost impossible, however, to secure specific data for purposes of investigation, as the complainants are unwilling to identify themselves with the charges they make lest they be cut off from supplies. While no legal proof has been presented to the commission, its officials are morally certain that large quantities of spot coke are being sold at prices so far above the official schedule as to make it very difficult for the small furnaces to sell their output at the fixed price and make any money. Fuel Administrator Garfield also appears to have received numerous complaints of this character, and from time to time has issued warnings to sellers of coke, but does not appear to have followed them up with the drastic action threatened.

Concerning coke contracts, the commission is advised that where agreements call for deliveries at less than the controlled price buyers are having great difficulty in obtaining any coke at all. On the other hand, furnaces having contracts calling for prices above the official schedule are obtaining full supplies without difficulty.

The Situation as to Iron Ore

Officials here profess to have no knowledge of any movement on the part of iron ore producers in opposition to the provision of the President's recent proclamation that on contracts made during the next three months prices will be revised on deliveries after April 1 to conform to any changes that may become effective on or after that date. It is appreciated, of course, that any downward revision of war prices would be objectionable to ore producers, but inasmuch as there appears to be no prospect of any reduction in the near future the matter is not regarded as of any great present importance. Generally speaking, the officials here do not expect a downward revision of the controlled price schedule when the recent extension expires. While, as the result of readjustment, some items may be lowered, it is not believed that the average of the revised prices will show a decline. Of course, no one can say what developments may occur before April 1; but in view of the steady expansion of the Government's war program, the increased requirements of the railroads under Governmental control, and the heavy private demand for material of all kinds the officials can as yet see no reason to expect lower prices for some time to come.

W. L. C.

The Acme Steel Goods Co., 151 Lafayette Street, New York, has leased the seventh floor in the building at 295-309 Lafayette Street, comprising about 25,000 sq. ft. of floor area for its local headquarters.

FIRST McDONALD BAR MILL

Starting of New Carnegie Plant in Youngstown District—All Electrically Driven

On Thursday, Jan. 3, the first of the new McDonald bar mills of the Carnegie Steel Co. at McDonald, Ohio, was put in operation, and its starting was witnessed by a number of executive officers of the company from Pittsburgh and also by operating officials from the various Carnegie plants in the Youngstown district. This new 8-in. guide bar mill is to roll rounds and squares ¼-in. to ¾-in., concrete bars and hexagons of the same range, flats 11/32-in. to 1½-in. wide by No. 12 gage to 7/16-in. thick. The production will depend largely on the kind of material the mill is working on, but under ordinary conditions and with a full supply of steel it will be from 3500 to 4000 tons per month.

Ultimately the McDonald works will contain nine mills, these consisting of two 8-in. hoop mills, a 10-in. combination mill, a 10-in. hoop mill, a 12-in. hoop mill, an 8-in. bar mill, a 10-in. bar mill, a 14-in. bar mill and an 18-in. band mill. Originally the appropriation for these mills was \$7,000,000 but their complete cost will involve a much larger sum. The construction work was started on Feb. 10, 1916, and all of it has been done by the Carnegie Steel Co. construction forces, with the exception of the steel erection, metal sash work, composition roofing and glazing. The structural steel work was done by the American Bridge Co., the metal sash largely by the Trussed Concrete Steel Co. and the roofing by Dalzell Brothers Co., Youngstown. Close to 20,000 tons of structural steel will have been used when all the mill and other buildings are completed.

The nine mills were designed in the Youngstown offices of the Carnegie Steel Co., while contracts were let for the castings and the materials entering into the buildings. All patterns were made in the company's pattern shops at Youngstown and material for the most part was machined and finished in its shops at Youngstown and McDonald. The first building erected was a machine shop, and the majority of the castings have been machined there.

Electrical Equipment

The entire plant will be electrically driven. Power is generated at the Ohio Works at Youngstown by engines using gas from the blast furnaces. Current is transmitted over a steel tower line to the transformer station at McDonald. This line is five miles long and the current is 44,000-volt, alternating, 3-phase, 25-cycle. At the transformer station it is cut down to 6600 volts by an 8000 kva. General Electric transformer, one of the largest ever built. The main mill motors take their current at 6600 volts but it is further transformed for the auxiliary motors, lighting, etc., to 220 volts in transformers built by the Pittsburgh Transformer Co., and to 220-volt direct current mainly for the machine shops, in two 1000-kw. Westinghouse generator sets taking the 6600-volt current with 1440-kw. motors. All transmission inside of the mills and through the electric subway is by bus bar construction, in which about 140 tons of copper have been used. In the pump house four pumps have been installed and seven more will be added.

All buildings are steel framed, with sheet iron construction for the most part. The mill buildings proper have sheet iron roofs; sides are corrugated steel, glass and concrete. It is estimated that the entire group of mills when in full operation will require about 6000 rolls.

Unusual Safety Provisions

A chief feature in the construction of this plant is the attention paid to the installation of safety devices for the protection of the men. The main entrance to the plant is at McDonald, over an elevated bridge crossing the tracks of the Baltimore & Ohio and the Youngstown & Northern railroads, the latter being a private railroad owned by the Carnegie Steel Co. and connecting the Ohio Works and the McDonald mills. This elevated bridge also spans all the mill yard tracks. There

is an incline from this bridge to the subway leading to the mills which is 16 ft. wide by 8 ft. in height. It connects with all mill and shop buildings, there being a stairway at each building, also a square opening into each mill through which repairs or materials of any kind may be lifted by the mill cranes. The workmen are thus able to go to their respective mills without crossing at grade any tracks or climbing over machinery in any of the other mills. Rolls and any repair parts or renewals from the shops to the mills are transported on small electric cars from the shop to the mills. A storage battery system is used for this work. At the entrance to each mill, at the head of the stairs, is a welfare building in which are placed toilets, lockers, wash rooms, etc.

The steel from the Ohio mills at Youngstown enters the McDonald plant at the north side through the billet yard, which has a full equipment of overhead cranes. The steel is unloaded by these cranes and placed on skids from which it is transported to the reheating furnaces which are fired with pulverized coal. After the rolling operations the product goes into the warehouses at the south end of the plant, where it is loaded for shipment on cars that stand on depressed tracks. The shipping track serving each mill is not over 300 to 400 ft. long. The first warehouse will be connected to all nine mills and is about 1000 ft. long. The mills come in between the billet yard and the first warehouse in three groups.

The mill buildings are in groups of three. Each mill, however, is in a building by itself with an individual overhead crane. In addition to the mill buildings proper, there will be an electric substation building, a shop building, store room building, oil house, physical testing laboratory, pump house and office building. The mills are located about seven miles from the center of Youngstown, 2½ miles from Girard, and the same distance from Niles, and are on the Mahoning river. The Carnegie Steel Co. is building a new town at McDonald, for which \$2,000,000 has been appropriated. Already more than 100 comfortable homes have been built for the employees, and probably double that number will be built this year. It is hoped to have all the nine mills ready for operation late this year, or by next year. The second is about finished and will be started in a short time.

NEW DEMURRAGE RULES

Director General McAdoo Explains Situation—Many Trains Discontinued

WASHINGTON, Jan. 8.—With a view to hastening car movement by cutting down the time allowed for the unloading of freight cars, Director General McAdoo has issued new demurrage rules effective Jan. 21. The new regulation continues in force the present two days free time, but increases from 50 to 100 per cent the charges collectible thereafter. The new order is as follows:

All carriers by railroad, subject to the jurisdiction of the undersigned, are hereby ordered and directed forthwith to publish and file, and to continue in effect until further order, tariffs effective Jan. 21, 1918, wherein demurrage rules, regulations and charges shall be changed so as to provide:

A. (1) Forty-eight hours (two days) free time for loading and unloading on all commodities.

(2) Twenty-four hours (one day) free time on cars held for any other purpose permitted by tariff.

B. Demurrage charges per car per day or fraction of a day until car is released, as follows: Three dollars for the first day, \$4.00 for the second day, and for each succeeding additional day the charge to be increased \$1.00 in excess of that for the preceding day until a maximum charge of \$10.00 per car per day shall be reached on the eighth day of detention beyond free time, the charge thereafter to be \$10.00 per car per day or fraction thereof. These charges will supersede all those named in existing tariffs applicable to domestic freight, and specifically contemplate the cancellation of all average agreement provisions of existing tariffs.

No change is authorized hereby to be made in demurrage rules, regulations and charges applying on foreign export freight awaiting ships at export points.

Upon my request, the Interstate Commerce Commission has issued Fifteenth Section Order No. 225 authorizing the filing of tariffs to accord with this order to become effective Jan. 21, 1918, on one day's notice.

Carriers shall immediately file said tariffs with appropriate state commissions or other state authorities.

In explaining the action taken, Mr. McAdoo in an official statement draws attention to the imperative necessity existing for releasing freight cars and for relieving terminals which are now badly congested, these unfavorable conditions injuriously affecting in vital ways the Government's conduct of the war, its aid to the Allies, and the supplying of fuel, food and other necessities to the people of the United States.

"On these accounts," says Mr. McAdoo, "I have felt compelled to issue an order which will take effect throughout the United States on the 21st day of January, 1918, providing for heavy increase in demurrage charges unless cars are loaded and unloaded with promptness. In making this order I have fully considered the embarrassments of shippers and consignees on account of the scarcity of labor, the inevitable weather, the irregularity of transportation, and the consequent bunching of cars. Nevertheless, I am convinced that the total inconvenience and hardship on these accounts will be far smaller than the inconvenience and hardship which our people as a whole are suffering on account of the undue tying up of railroad equipment and will be very small indeed compared with the menace which the widespread tying up of equipment causes to the health and comfort of the people and the successful conduct of our war operations.

"I therefore appeal to every citizen to accept in a spirit of hearty cooperation the increased charges which will be imposed, and I especially appeal to every shipper or consignee, as a patriotic duty, to employ every possible effort and expedient (even though it involves unusual and special arrangement and additional cost) to load and unload freight cars with the least possible delay in order that the existing congestion may be cleared up before the new demurrage rule goes into effect."

In the effort to increase the capacity of the eastern carriers to handle freight, Director General McAdoo has directed the discontinuance of 400 passenger trains running east of Pittsburgh. In the main these were parlor car trains or trains composed chiefly of chair cars. The Pennsylvania system has dropped upward of 125 trains; the New York, New Haven & Hartford, 85; the Baltimore & Ohio, 60; the New York Central, 60, and other roads from five to 25. The locomotives relieved by the cutting out of these trains will be employed, first, in the hauling of coal, and later for the general relief of the freight congestion.

Wages of Puddlers Again Advanced

The regular bi-monthly wage settlement of the puddling and bar iron scales between representatives of the Western Bar Iron Association and the Amalgamated Association was made in Youngstown, Ohio, last week. It was found that the average selling price on shipments of common iron bars in November and December was 2.95c., as compared with 2.85c. in September and October. This entitles the puddlers to an advance in the boiling rate from \$13.80 to \$14.30 for January and February, much the highest rate ever paid for boiling in the history of the bar iron trade. Finishers also receive an advance for the two months of about 5 per cent. The A. M. Byers Co., operating puddling plants at Girard, Ohio, having 88 single puddling furnaces, and the Youngstown Sheet & Tube Co., having a puddling plant at East Youngstown, Ohio, containing 23 double puddling furnaces, do not sign the Amalgamated scales, but have always paid the Amalgamated rate, and therefore both concerns will pay their puddlers \$14.30 per gross ton for January and February.

For the 12 months ended Dec. 1, 1917, 11 of the employees of the Cincinnati Planer Co., Cincinnati, had a perfect attendance record. As a reward they received 10 per cent of their yearly earnings.

Machinery Markets and News of the Works

MORE MUNITIONS ORDERS

Central West Feels Effects of Expansion

Inquiries for Tools for Making 6 and 9-In. Shells —Orders for Fuse Parts Are Placed

The Central West is undergoing a great expansion in munitions manufacture, many contracts having been placed in the past few weeks, which are now reflected in an increasing demand for machine tools in Chicago and Cleveland. In Eastern markets new demand is relatively quiet.

Several contracts for fuse parts have been awarded to manufacturers who are buying equipment in the Chicago market. The Stenotype Co., Indianapolis, the Indiana Brass Co., Frankfort, Ind., the Frost Mfg. Co. and the Hall Lamp Co., Kenosha, Wis., have all received contracts for fuse parts. Other war contracts have been placed with the F. W. Spacke Machine Co., Indianapolis, and Arbuckle & Co., Rushville, Ind. The Wagner Axle Co., Anderson, Ind., has bought 20 turret lathes in Chicago.

Manufacturers in the vicinity of Chicago are figuring on contracts for making 6 and 9-in. shells. As the Government expects contractors to give assurance of ability to obtain the necessary equipment prospective contractors are making tentative inquiries.

Progress in creating a large munitions center at Calumet, near Chicago, is reported, but official statements as to the plans are lacking.

Cleveland manufacturers are conferring with the Government for the purpose of devising plans to extend the facilities of Cleveland plants in the manufacture of munitions.

The machine tool section of the War Industries Board has sent an inquiry to Cleveland manufacturers for 30 24-in., 75 18-in. and 60 16-in. turret lathes, deliveries to be made by April 1. The S. K. F. Ball Bearing Co., Cleveland, has bought 10 turret lathes. Orders are now being placed by the Morgan Engineering Co., Alliance, Ohio, for its ordnance plant. Victor R. Brown- ing & Co., Mansfield, Ohio, have received a contract from the Navy Department for 200 5-in. gun mounts and will require lathes, vertical and horizontal milling machines, radial drills, grinders and shapers. The A-1 Machinery Co., Cleveland, has bought about \$50,000 worth of tools for equipping a motor truck factory. The Chickasaw Shipbuilding Co., Mobile, Ala., is expected to come to the Cleveland market for a round lot of equipment for its new shipyard.

In New York new inquiry has fallen off considerably. Still there is a fair amount of business being done. The Watson-Stillman Co., 50 Church Street, New York, has closed a contract with the Ordnance Department for hydraulic jacks for 9.5-in. guns. About \$100,000 worth of machine tools will be bought this week, several orders having already been placed. There is an inquiry in the market for 250 lathes, regarding which no further information is available. The awarding of a Government contract for 15,000 or more Browning guns to the New England Westinghouse Co., Springfield, Mass., is expected to be followed by the placing of orders for some new equipment.

The McMyler-Interstate Co., Cleveland, has been awarded a contract for a 350-ton fitting-out crane for the Brooklyn Navy Yard, the largest crane ever built. It will cost upward of \$800,000. The Air Nitrates Corporation, 360 Madison Avenue, New York, is receiving bids on seven 5-ton, four 20-ton and four 6-ton cranes for the Government nitrate plant at Muscle Shoals, Ala.

New York

NEW YORK, Jan. 7.

Mail inquiries for machine tools have fallen off greatly during the past two weeks. A large house, which had been averaging about 15 inquiries a day, reports that its mail inquiries have dropped off to about 15 per week. A considerable part of present buying is being done over the telephone in a very quiet way. Buyers appreciate the present conditions and lose little time in placing orders when their needs become definitely known.

There is considerable miscellaneous buying in small lots. Boiler shops, for example, have been inquiring for punching machinery, while ball bearing manufacturers have been seeking grinders and other tools and ordnance shops are filling out their requirements as a follow-up to heavy purchasing done during recent months.

An inquiry is in the market for 250 lathes, about which no further information is to be had. The Watson-Stillman Co. is placing orders for tools totalling \$100,000 in value, for making hydraulic jacks, a large contract having just been received from the Ordnance Department. A new manufacturing building will be erected.

The Government is gradually taking from export warehouses in New York the tools which were commandeered a few months ago for the benefit of American manufacturers. Twenty milling machines were among the latest lot diverted to the war needs of this Government.

The awarding of a Government contract for 15,000 to 20,000 Browning machine guns to the New England Westinghouse Co., Springfield, Mass., will probably be followed by the purchase of considerable new equipment in this market. The Watertown Arsenal continues to place orders, having bought two very large gun grinders.

The Fire Gun Mfg. Co., New York, has bought several tools for the manufacture of fire extinguishers.

The McMyler-Interstate Co., Cleveland, has received from the Navy Department an order for a 350-ton fitting out crane for the Brooklyn Navy Yard. The cost is upward of \$800,000. Two others of the same type are to be awarded by the Government for other navy yards. The Air Nitrates Corporation, 360 Madison Avenue, New York, has received bids for seven 5-ton, four 20-ton and four 6-ton cranes for the Government plant for producing nitric acid by atmospheric fixation at Muscle Shoals, Ala. It is understood that there will be considerable purchasing of hydraulic machinery and other equipment. The Worthington Pump & Machinery Corporation has bought two traveling cranes for its Harrison, N. J., works. The Ohio Locomotive Works has sold two more 20-ton locomotive cranes to the Submarine Boat Corporation.

The R. J. H. Co., New York, has been incorporated with a capital of \$10,000 to manufacture fire extinguishers and allied specialties. R. J. Horner, W. H. Lilly and A. J. Peck, 536 West 114th Street, are the incorporators.

The Best Foundry Co., Brooklyn, has been incorporated with a capital of \$9000. J. Danziger, U. S. Adler and I. B. Louis, 35 Nassau Street, New York, are the incorporators.

The Deep Drawn Metal Corporation, New York, has been incorporated with a capital of \$30,000 by W. G. Smith, C. Stahlberg and H. F. Hughes, 730 Riverside Drive.

The Alliance Iron & Steel Corporation, New York, has been incorporated with a capital of \$75,000 to manufacture iron and steel. H. F. Holly, H. C. Gable and G. D. Zahm, 261 Broadway, are the incorporators.

The N. J. Henry Mfg. Co., 1 Broadway, New York, manufacturer of wire screens, has established a new works at 983 Flatbush Avenue, Brooklyn.

The International Ash Can Works, New York, has been incorporated with a capital of \$10,000 by A. M. Rosenthal and B. M. Joffe, 1384 Prospect Avenue.

Shapiro & Aronson, 20 Warren Street, New York, manufacturers of electric and gas fixtures, have filed articles of incorporation with a capital of \$250,000.

The Commercial Research Co., 18 East Forty-first Street, New York, manufacturer of platinum specialties, is planning for the erection of an addition to its plant on Myrtle Avenue, Flushing, L. I., to cost about \$15,000.

The Light Metals Co., Elizabeth, N. J., has been incorporated, with a capital of \$125,000, to manufacture metal goods. D. H. McLean and F. E. Wallace, Elizabeth, are the incorporators.

The General Welding Co., Jersey City, N. J., has been incorporated, with a capital of \$10,000, to manufacture welding apparatus. C. I. Rees, Lyndhurst, and William B. Walsh, Brooklyn, are the principal incorporators.

The New York Electric Rectifier Corporation, Newark, has been incorporated, with a capital of \$50,000, to manufacture electrical apparatus. James M. Clark, East Orange; Frank E. Richards, Glen Ridge; and George W. Downs, Madison, are the incorporators.

William E. Lehman, 738 Broad Street, Newark, has acquired property on the corner of New Jersey Railroad Avenue and Miller Street, 95 x 110 ft., for the construction of a three-story factory for light machine work.

The Tidewater Iron Works, 731 Jefferson Street, Hoboken, N. J., will build a new one-story addition, 50 x 100 ft.

The Union Dry Dock & Repair Co., Weehawken, N. J., has increased its capital from \$150,000 to \$500,000.

THE IRON AGE has received an inquiry for a portable shaper for mounting on large machine beds and trueing up wearing surfaces.

The United States Cast Iron Pipe Co., Burlington, N. J., is completing a one-story addition, 25 x 40 ft., at a cost of \$10,000.

The Hydro Barge Co., Penns Grove, N. J., is planning for a shipbuilding works near Norfolk, Va., to be equipped for the construction of concrete barges and ships. Fred D. Doty is president.

In connection with the expansion of its business the National Wire Wheel Works, Inc., Geneva, N. Y., recently increased its capital stock from \$350,000 to \$1,000,000. The increased funds are required for the expansion of its manufacture of wire wheels both for automobiles and airplanes. Its recently completed addition will allow for an output of about 1500 wheels per day.

The Pioneer Iron Works, 149 Pioneer Street, Brooklyn, will build a one and two-story machine shop, 40 x 80 ft., and a one-story forge shop, 65 ft. square, to cost about \$12,000.

The Durkee Mfg. Co., Grasmere, Staten Island, N. Y., has been incorporated with a capital of \$100,000 by J. W. and W. H. Durkee and F. A. Wurzbach, 381 East 165th Street, to manufacture compasses and other specialties for use in airplane and general marine service.

The High Efficient Motor Corporation, Brooklyn, has been incorporated with a capital of \$200,000 to manufacture motors, engines, etc. M. Leventhal and R. E. Weber, 1014 Bushwick Avenue, are the incorporators.

The Transit Development Co., 85 Clinton Street, Brooklyn, a subsidiary of the Brooklyn Rapid Transit Co., will build an addition to its electric generating plant at Kent and Division avenues to cost about \$500,000. The extended plant will be 275 x 300 ft. T. S. Williams is president.

H. Sinclair Roberts, New York, has been incorporated with a capital of \$10,000 to manufacture hardware specialties, ornamental ironwork, etc. H. Sinclair Roberts, G. H. Burlis and C. Carow, 1192 Union Street, Brooklyn, are the incorporators.

A one-story machine shop, 100 x 200 ft., will be erected at Linden, N. J., by MacGovern & Co., 114 Liberty Street, New York, dealers in machinery.

The Remington Arms-Union Metallic Cartridge Co., 1500 Hudson Street, Hoboken, N. J., has acquired a building, 75 x 100 ft., as an extension to its works.

The Made-In-America Toy Mfg. Co., 73 Adams Street, Hoboken, N. J., has been incorporated with a capital of \$125,000 by Isador Goldberg, 525 Washington Street, Hoboken, and others.

The Commercial Acetylene Supply Co., Jersey City, N. J., has been incorporated with a capital of \$500,000 to manufacture lighting equipment for railroads. Cornelius A. Cole, Arthur E. Oakley and Paul E. Britsch, Jersey City, are the incorporators.

The Niles-Bement-Pond Co., Plainfield, N. J., has awarded

contract for a one-story forge shop addition to its plant, 60 x 200 ft.

The Reliable Tool Co., Irvington, Newark, N. J., has been incorporated with a capital of \$125,000 to manufacture tools. Charles Katzan, Irvington; Victor Katzan and Louis Pischkittel, Newark, are the incorporators.

The Russell-Schwartz Co., Newark, N. J., operating a cabinet works at 109 Frelinghuysen Avenue, has increased its capital from \$50,000 to \$250,000.

The Bronze Art Fixture Co., Newark, N. J., has been incorporated with a capital of \$25,000 by William D. Donovan, Russell Fleming and Matthew Bird, Newark, to manufacture gas fixtures, etc.

The Fabricated Steel Products Co., New York, has been incorporated with a capital of \$150,000 by H. Lindemann, W. E. I. Lambrecht and W. Arnold, 322 Tenth Avenue, to manufacture steel specialties.

The John Davenport Foundry Co., 74 Broadway, New York, and Stamford, Conn., has had plans prepared for a two-story foundry, 90 x 300 ft., on Davenport Place, Stamford, to cost about \$90,000.

The Universal Sheet Metal Works, 330 East Ninety-eighth Street, New York, has been incorporated with a capital of \$100,000. J. Lefkowitz and R. Sadwith, 3202 Perry Avenue, are the incorporators.

The Ordnance Supply Co., New York, has been incorporated with an active capital of \$100,200 to manufacture firearms, etc. B. L. Solomon and B. and M. J. Shapiro, 302 Convent Avenue, are the incorporators.

The Pratt Chuck Co., Main Street, Frankfort, N. Y., manufacturer of lathe chucks, steel stamping work, etc., has increased its capital from \$550,000 to \$950,000.

The Ordnance Department, Washington, has closed negotiations for 1300 acres at Morgan Station, near Perth Amboy, N. J., as site for a shell-loading and assembling works, estimated to cost about \$3,000,000 and to employ, it is reported, about 4000 hands. The erection work will be handled by the T. A. Gillespie Co., 50 Church Street, New York. Local offices have been established in the Raritan Building, Perth Amboy.

Buffalo

BUFFALO, Jan. 7.

The Sizer Forge Co., Buffalo, has filed plans for the erection of a machine shop of steel construction at its plant at Larkin Street and the Lake Shore Railroad.

The Militaire Motor Vehicle Co., 96 Bidwell Parkway, Buffalo, has completed arrangements for the removal of its plant to Newark, N. J., where work will soon be started on Government contracts for military motor cycles and trucks. R. L. Notman is secretary. It is stated that its plant at Clyde and Kensington avenues and the Lackawanna Railroad, Buffalo, has been disposed of and will later be occupied as a foundry and machine shop by a Canadian company as its United States branch factory.

The Sanford Motor Co., Syracuse, N. Y., has completed plans for a building, 80 ft. square.

The Cygnet Mfg. Co., Buffalo, N. Y., has been incorporated to take over the business of the Cygnet Rear Co., manufacturer of motor cycles with rear car attachments, used as delivery cars, including the transport of munitions and for other military purposes. The company's plant is at Niagara and West Ferry streets and the New York Central Belt Line, where manufacturing on large contracts is under way. Its capital stock is \$600,000. Otto L., L. J., and E. A. Heintz are the incorporators.

The plant of the George H. Thatcher Mfg. Co., Albany, N. Y., was damaged by fire recently, causing an estimated loss of \$100,000. Valuable patterns of equipment for submarine destroyers were badly damaged.

The Gowanda Light & Power Corporation, Gowanda, N. Y., is planning for a new electric power plant.

The Rome Locomotive & Machine Works, 1012 East Dominick Street, Rome, N. Y., has been merged with the Rome Mfg. Co., on Railroad Street, manufacturer of copper and brass goods.

The Solvay Process Co., Solvay, N. Y., has filed notice of increase in its capital from \$18,000,000 to \$36,000,000.

The General Drop Forge Co., Buffalo, operating a works at 1756 Elmwood Avenue, has been incorporated with a capital of \$10,000 by E. H. Letchworth, C. M. Baldy and W. M. Wilkins.

The Selden Motor Vehicle Co., Rochester, has awarded contract for an addition to its plant, 160 x 200 ft., on Probert Street, near East Avenue, to cost about \$100,000. The Austin Co., Cleveland, is the contractor.

Frank N. Treevor, Buffalo, has taken out a permit to build a machine repair shop on Niagara Street, near Brace Street.

The A. R. Williams Machinery & Supply Corporation, Buffalo, has been incorporated with a capital of \$60,000 to manufacture machinery, etc. W. H. Young, T. A. Hollinrake and T. D. Reid, Buffalo, are the incorporators.

The International Arms & Fuze Co., 511 Fifth Avenue, New York, with plant at Bloomfield, N. J., has been merged with the International Arms & Fuze Securities Corporation, Portland, Maine.

The Onondaga Bed Mfg. Co., 718 East Water Street, Syracuse, manufacturer of metal beds, has increased its capital from \$30,000 to \$75,000.

B. F. Metcalf & Son, 115 North Warren Street, Syracuse, have been incorporated with a capital of \$30,000 to manufacture plows, mowing machines, etc. B. F., B. F., Jr., and M. L. Metcalf are the incorporators.

The Smith Wheel Co., Inc., 101 North Geddes Avenue, Syracuse, manufacturer of automobile wheels, has increased its capital from \$100,000 to \$3,000,000.

The Porter-Cable Machine Co., 501 East Water Street, Syracuse, manufacturer of machinery and machine tools, has increased its capital from \$100,000 to \$150,000. The increase will be used for equipping the new extension to its plant on North Salina Street. Walter A. Ridings is president.

The Oldman Boiler Works, Illinois Street and the Lackawanna Railroad, Buffalo, N. Y., is having plans completed for a one-story addition, 50 x 100 ft.

The Universal Aircraft Co., Walter C. Vamp, president, Norwich, N. Y., has plans in preparation for a one and two-story airplane factory, 130 x 1000 ft.

The Gurney Ball Bearing Co., Jamestown, N. Y., has awarded contract to the Jamestown Construction Co. for an addition, 39 x 256 ft., to its plant on Chandler Street.

Philadelphia

PHILADELPHIA, Jan. 7.

Schaum & Uhlinger, Inc., Glenwood Avenue and Second Street, Philadelphia, manufacturer of machinery and parts, has purchased a foundry building adjoining its works at a reported price of about \$150,000.

The Safety Motor Equipment Corporation, Philadelphia, has been incorporated in Delaware with a capital of \$300,000 to manufacture power boats and automobiles. J. M. Frazier and Wray C. Arnold, Philadelphia, and W. R. Rutself, Ardmore, Pa., are the incorporators.

A one-story engine and power house addition to cost about \$18,000 will be constructed by F. A. Poth & Sons, Inc., Philadelphia, at its brewing plant at Thirty-first and Jefferson streets.

Warren Webster & Co., Camden, N. J., manufacturers of ranges, heaters, etc., have increased their capital from \$150,000 to \$450,000.

The Empire Tire & Rubber Co., Trenton, N. J., is making additions to its plant capacity at an estimated cost of \$220,000, of which about \$40,000 will be expended for buildings and \$180,000 for machinery. The company proposes to double its output of automobile tires.

The Board of Trustees of the School of Industrial Arts, Trenton, N. J., is negotiating with the City Commission for the construction of a shop building at its school. The board is considering the establishment of a department for instruction in machine-shop work, particularly as needed in ship-building.

The Chester Shipbuilding Corporation, Chester, Pa., has awarded a contract for a new punch shop and mold works addition, two stories, 190 x 500 ft.

The Phillipsburg Foundry & Machine Co., Phillipsburg, Pa., has been incorporated with a capital of \$10,000 by H. B. Scott.

The Fairmount Foundry Co., Hamburg, Pa., has commenced operations at its new foundry.

The Brownsville Foundry & Machine Co., Brownsville, Pa., has been organized to operate a local foundry and machine shop. William W. and William P. Welker head the company.

Fire Jan. 2 destroyed a portion of the plant of the Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa., with loss estimated at \$200,000. The plant will be immediately rebuilt. The works are manufacturing 4-in. shells for the Government and give employment to about 2800 workers.

The York Steel Corporation, Lansdowne, Pa., has been incorporated with a nominal capital of \$5,000 to manufacture steel products. Frank A. Moorhead is the principal incorporator.

Baltimore

BALTIMORE, Jan. 7.

The Hammered Piston Ring Co. of America has been chartered in Baltimore with authorized capital stock of \$1,400,000 and has acquired the plant of the American Piston Ring Co., Newark, N. J. Bernard A. Brennan, Baltimore, is president; William Schmidt, Newark, vice-president and general manager, and William E. P. Duvall, Baltimore, secretary and treasurer. The directors include the officers and Christian Schmidt, Newark, and Henry W. Williams, Baltimore.

The Richardson Auto Electric Corporation, Charles Street and Lafayette Avenue, Baltimore, has been incorporated with \$50,000 capital stock to manufacture and repair batteries. The incorporators are Donald R. Richardson, Frank Laurence Pollard and Carl C. Schmidt.

The P-R Engine Co., 609 Calvert Building, Baltimore, has been incorporated with \$1,000 capital stock by James Piper, J. Bannister Hall, Jr., and Hans Froelicher, Jr., to manufacture oil engines.

The Chesapeake Can Co., 2600 Boston Street, Baltimore, has been incorporated with \$150,000 capital stock by Edward M. Staylor, M. Raymond McDonald and William T. Thornton.

The Safety Steering Device Mfg. Co., 1700 East Baltimore Street, Baltimore, has been incorporated by Jacob Janofsky and Nathan and Bertha Small to manufacture steering devices.

The Autogenous Welding & Equipment Co., the Enterprise Auto Repair Co., of 1219 Maryland Avenue, Baltimore, and the William A. Norton Co., 1217 Maryland Avenue, have consolidated under the name of the Autogenous Welding & Machine Co.

The Lytton-Howe Mfg. Corporation, Norfolk, Va., has been chartered with \$50,000 capital stock to manufacture machinery. J. W. Lytton is president.

The National Enameling & Stamping Co., Light and Wells streets, Baltimore, has awarded a contract for the construction of a one-story addition.

The Richmond, Fredericksburg & Potomac Railroad, Richmond, Va., is having plans prepared for an addition to its engine house to cost \$20,000.

The Southern Railway, Charlotte, N. C., is planning for the erection of a new engine repair shop, 30 x 80 ft., at Bulls Gap, Va.

The United States Government, Washington, D. C., is planning for the construction of a one-story repair shop, 700 x 700 ft., near Atlanta, Ga., to cost about \$2,000,000. Major Drury K. Mitchell, Quartermaster Corps, National Army, Atlanta, is in charge.

Chicago

CHICAGO, Jan. 7.

Developments of the past week indicate that a great expansion in the manufacture of munitions is taking place in the Northern Central States, which will require large numbers of machine tools of types not heretofore in heavy demand. It has been pointed out repeatedly that the greatest demand of recent months has been for large tools, a demand which is, in fact, stronger than ever. Machines for gun making, including those required in the production of gun carriages and naval gun mounts, and to some extent for large shells, have been absorbed to an extent that has placed their deliveries months off. A growing requirement is now in evidence for hand-screw machines, automatic screw machines and equipment necessary in the manufacture of shell fuses and their parts, as well as engine lathes and other tools for making 6 and 9 in. shells.

The Stenotype Co., Indianapolis, has a Government contract for fuse parts and has placed orders for automatics. It handled similar orders for foreign governments, and kept its machinery intact, but idle, for a long period awaiting orders from this Government. It is reported to have sold some of the equipment it used on former orders.

The Indiana Brass Co., Frankfort, Ind., which also has a contract for fuse parts, has purchased automatics and hand-screw machines. A similar contract has been booked by the Frost Mfg. Co., Kenosha, Wis. The Hall Lamp Co., Kenosha, has been making headlights for war trucks, but has now taken a contract for fuse parts.

Other war contracts have been placed with the F. W. Spacke Machine Co., Indianapolis, and Arbuckle & Co., Rushville, Ind. The Wagner Axle Co., Anderson, Ind., has purchased about 20 large turret lathes. The Standard Forgings Co., Indiana Harbor, Ind., which has been a consistent buyer for some months, has just placed orders for several vertical turret lathes, on which prompt delivery will be made.

The company has a large amount of war work in its shops, largely gun forgings. The Rock Island Arsenal and the Four Lakes Ordnance Co., Madison, Wis., have been buying a few additional tools to round out previous purchases.

The inquiries for machines such as are required in making 6 and 9 in. shells do not indicate, in some cases, that actual orders have been placed for the shells, but spring from the action of the Government in requiring bidding contractors to give assurance as to their ability to obtain the necessary machinery to handle contracts.

Progress in creating a munitions center at Calumet, near Chicago, is taking tangible form, although official statements as to the plans are lacking. A building, 165 x 300 ft., is being erected at Ambridge, Gary, by the American Bridge Co., which will house a plant for making large guns. The shop will be completed next spring. At East Chicago, Ind., a gun shop has been completed under plans and specifications said to have been approved by the War Department. Local business men are back of the development of the Calumet region, but they say they are bound by the Government to reveal nothing of the plans on foot.

The plant of the Otis Elevator Co. in this city, which for some time has been idle, but is now being re-equipped, will be devoted to the manufacture of rifle parts.

The Illinois State Council of Defense, 120 West Adams Street, Chicago, has been appealed to by the Government for 350 machinists and tool makers, all of whom are wanted in a hurry for employment in Illinois.

The Haskelite Co., a New York State corporation, will build a \$250,000 plant in Grand Rapids, Mich., for the manufacture of a specially prepared wood veneer for airplane wings. The main factory will be 200 x 540 ft., and constructed of concrete, steel and glass. Howard Bonbright, Detroit, will be president. H. C. Ferguson & Co., New York, are the engineers.

Steffenson Brothers, who sold their plant, making automatic and hand-screw machine products, to the Just-Rite Mfg. Co., Chicago, have decided to re-establish their business and have purchased a few machines. They can be addressed at 5331 Warner Avenue.

Alexander L. Levy, architect, 111 West Washington Street, Chicago, is taking bids on a three-story factory, 75 x 125 ft., to be erected on the South Side, for repairing auto trucks.

The Fuller Engineering Co., 332 South Michigan Avenue, Chicago, is preparing plans for a \$750,000 plant for the Consumers' Portland Cement Co., 10 South La Salle Street, Chicago. It will comprise a number of one-story buildings of concrete and brick.

Building permits issued in 1917 in Chicago were for 4938 buildings, valued at \$64,144,150, as compared with 10,277, valued at \$112,835,150 in 1916, the decrease being 43.15 per cent.

The Laurel Motors Co., Union Building, Anderson, Ind., is preparing to equip a factory for the manufacture of automobile cylinder heads of a new design. It is expected that a new type of motor will also be made.

The Standard Steel Car Co., Chicago, will build a one-story machine shop, 250 x 800 ft., at its Hammond, Ind., works to cost about \$200,000.

The American Wire Fabric Co., 208 South La Salle Street, Chicago, has completed plans for a new plant at Blue Island, Ill., to cost about \$150,000.

L. Sparks, 320 West Grand Avenue, Chicago, will build a one-story foundry, 50 x 125 ft., at 1723-5 Carrol Avenue, to cost \$4,500.

The United Owners' Supply Co., Chicago, has been incorporated in Delaware with a capital of \$200,000 to manufacture automobiles. J. Berliner and B. F. Cowan, Chicago, are the incorporators.

The Midland Electric Steel Co., Chicago, has increased its capital from \$40,000 to \$100,000.

Milwaukee

MILWAUKEE, Jan. 7.

The immediate demand for milling machines, shapers and other similar equipment, both on Government and private account, continues at the highest level yet reached. New business received the last week of the old year is said to exceed in volume that of any other week of 1917. Requirements of export buyers are enormous, but the even larger and more pressing demands of Government arsenals and contractors, of course, receive priority, and as a consequence unfilled orders are piling up as never before known.

The 10 days just closed have probably been the most remarkable in the history of the machine-tool industry for the reason that buying activity was maintained at a high

ebb at a time when new business always has been absent. Practically every tool builder closed on only the holidays proper and omitted the usual recess of a week or 10 days for inventory and vacations.

While it is generally believed that metal-working shops are fully occupied by Government work, so-called private business continues in fair volume. On the whole, however, the volume of private orders is small compared with normal, but it is limited only by the ability of manufacturers to handle it.

The United States Aero Propeller Co., Milwaukee, has been incorporated with a capital stock of \$30,000 to manufacture propellers and other parts for aircraft. The articles are signed by Fordyce H. Bottum, Frank L. McNamara and John H. Hurley, members of the firm of Bottum, Bottum, Hudnall & Lecher, 800 Pabst Building, Milwaukee, who for the present are not at liberty to reveal the identity of the promoters of the new corporation.

The Lloyd Mfg. Co., Menominee, Mich., manufacturer of patented machines for weaving reed and rattan work and metal wheels and gears for children's vehicles, etc., has increased its capital stock from \$400,000 to \$1,000,000 and will establish branch assembling plants in New York, Philadelphia, Boston, St. Louis, Cleveland, Kansas City, Minneapolis, Atlanta, Cincinnati, Detroit, Portland and San Francisco, to effect savings in freight rates. The manufacture of weaving machines and metal parts will continue at the Menominee plant, which probably will be enlarged during the coming summer. M. B. Lloyd is president and general manager.

The Hamilton & Beach Mfg. Co., Racine, Wis., manufacturer of small, high-speed electric motors for blowers, fans, etc., will award contracts this week for a three-story addition, 80 x 150 ft., of reinforced concrete, to the five-story factory completed during the spring of 1916. The addition and equipment will cost about \$80,000. The architect is A. L. Flegel, Racine. Fred J. Oslus is president and general manager.

The Landover Truck Co., Marinette, Wis., formerly of Chicago, is now engaged in the regular production of commercial motor vehicles at the rate of two a day, which will be increased from time to time.

The Damrow Brothers Co., Fond du Lac, Wis., manufacturer of galvanized and other sheet metal containers and stampings, expects to move into its new plant at Brooke Street and Western Avenue, Jan. 15. Plans have been enlarged to include a complete tin rolling mill so that the company may overcome the shortage of sheet tin by rolling its own supply from the rough pig. H. F. Damrow is president and general manager.

Nelson Thorbus, Brantwood, Wis., manufacturer of edged tools and cutlery, will enlarge his plant and increase the output, which henceforth will be distributed through the jobbing and retail hardware trade. Mr. Thorbus for 30 years was an inspector of edged tools for Northwestern railroads.

The Wisconsin Farm Tractor Co., Sauk City, Wis., has made a contract with the Brewer-Mosel Automobile Co., Madison, Wis., to act as exclusive distributor of its all-steel tractor in the United States and foreign countries. The output will be increased about 25 per cent. No plant extension will be necessary, but a small list of tools will be purchased from time to time. Earl McFarland is works manager.

The Gillette Rubber Co., Eau Claire, Wis., has broken ground for a three-story concrete and brick warehouse, 66 x 100 ft., and contemplates the addition of two stories to its present one-story main factory. A 66-in. calendar and two large tire-building machines will be installed at once. R. B. Gillette is general manager.

The Reliance Motor Truck Co., Appleton, Wis., formerly of Racine, Wis., is taking bids for the erection of the first unit of its new plant, 86 x 300 ft., one-story, to cost \$40,000 without equipment. Contracts will be awarded about Jan. 14. Ira L. Miller is president.

G. A. Huck, Sturgeon Bay, Wis., formerly of Milwaukee, is representing Eastern capital in negotiations for the purchase of the shipyards of Rieboldt & Wolter, Sturgeon Bay. It is stated that the Universal Shipbuilding Co. is being organized with a capital stock of \$1,500,000 to exercise an option which Mr. Huck has taken on the plant and yards. The articles of incorporation will be filed within a few days. The transfer is to be made Feb. 1, but the present owners are to complete a 265-ft. wooden steamer, which is expected to be out May 1. The yards and berths will be enlarged to build boats of a larger size, probably for the Great Lakes traffic exclusively.

The Murray-Mylrea Machine Co., Antigo, Wis., has been organized with a capital stock of \$50,000 to do general foundry and machine-shop work. It has purchased the real estate, buildings and equipment of the former International Holst Co. and Pioneer Iron Works, Antigo, and will make

some changes to specialize in the manufacture of sawmill, planing mill and general wood-working equipment and repairs for lumber interests in the vicinity of Antigo. The plant has been operated for two years by Mayer Brothers, Inc., manufacturer of power hammers, who probably will relocate their business in another city. Officers of the new company are: President, J. D. Mylrea; vice-president, S. B. Ullman; secretary and general manager, D. J. Murray, Jr.; treasurer, J. C. Lewis. Mr. Murray formerly was associated with his father in the D. J. Murray Mfg. Co., Wausau, Wis., builder of complete sawmills and equipment. The initial working force will number about 50 men.

The Trenam Tractor Co., 403 Cedar Street, Milwaukee, incorporated several months ago with an authorized capital of \$400,000, has purchased the plant and business of the Central City Iron Works, Stevens Point, Wis., from R. A. Cook, who has taken an interest in the company. The new owner will continue the commercial foundry business and also manufacture a gas and kerosene tractor. Some new equipment and tools will be installed at once. The Central works has held large contracts for railroad malleable castings for the "Soo Line" railroad, which will be filled by the Trenam company. Ralph Cook is retained as works manager. The officers of the Trenam company are: President and chief engineer, J. J. Trenam; secretary and treasurer, F. M. Schuler; directors, G. A. Gullikson, Stevens Points; Dr. Conrad Tasche, Sheboygan, Wis.; Otto Lay, Kewaskum, Wis., and the officers, both of Milwaukee.

The Simplex Machinery & Tool Co., Milwaukee, has been incorporated with a capital stock of \$75,000 by Paul D. Durant and H. F. Friedrich, attorneys, representing Milwaukee interests which have perfected a new type of metal-working device. The company will establish a plant in Milwaukee, but for the present no details will be given out.

The American Oil Motors Co., Milwaukee, is being organized with a proposed capital stock of \$1,000,000 by A. C. Lingelbach and associates in the Corporation Finance Co., 309 Caswell Block, Milwaukee, to undertake the manufacture of a new type of automobile, truck, tractor and airplane engine designed by Charles S. Salfeld, M. E., and using crude oil as fuel. It is proposed to establish a plant in Milwaukee.

The Milwaukee Shaper & Transmission Appliance Co., 1148 Holton Street, Milwaukee, has recently booked orders for shapers and other tools for domestic and export delivery which will occupy its maximum capacity for more than a year. While no definite plans have been made, it is possible that it will be necessary to increase its capacity. John E. Kraner is vice-president and general superintendent.

The Vesper Iron Works, Vesper, Wis., idle for about three years, will be placed in operation as a producer of malleable iron castings. C. R. Goldsworthy, the owner, has disposed of it to unnamed interests from Madison, Wis., which are now engaged in rehabilitating the foundry.

The Board of Education, Wausau, Wis., will be ready about March 1 for bids for the first unit of a proposed \$250,000 vocational and industrial training institute, ell-shaped, 200 x 200 ft., and 90 x 200 ft. Swarthout & Speer, Wausau, are the architects. S. B. Tobey is superintendent of schools.

The De Pere Mfg. Co., DePere, Wis., has increased its day and night shifts to the limit of capacity of its boiler and structural shops in order to rush work on an order for fifty-five 200-hp. high-pressure boilers for the Emergency Fleet Corporation. The plant has been operating day and night shifts since early in December on private contracts and has so much business on its books that the company is contemplating the erection of a shop addition next spring. The company is affiliated with the Joliet Bridge & Steel Co., and occupies the former Lyons Boiler Works at DePere. Ward Clark is general manager.

Detroit

DETROIT, Jan. 7.

Large orders for machine tools for munition making have kept the market unusually strong. Indications are that the first months of 1918 will see even greater activity in the machinery market. High-grade machines and mill and factory supplies are in great demand and dealers are having difficulty in filling orders. Deliveries are slow, especially on standard type machines, which require from four to six months. Factories are handicapped by lack of skilled workmen, hundreds of which have gone into the Government service in Detroit. Money is more easily obtainable and it is anticipated that considerable construction work will be undertaken at once.

The fuel situation, which has seriously handicapped large factories in Detroit and throughout the State, has improved. The Michigan Copper & Brass Co., Detroit, working on a large munition order for the Government, was forced to close recently on account of lack of coal, and throughout the

State more than 50 factories shut down until fuel was supplied. Coal is now arriving in Michigan in large amounts and no further difficulty is expected unless a traffic congestion results.

The Studebaker Corporation, South Bend, Ind., and Detroit, has taken out a permit for a building on East Jefferson Avenue, Detroit, to cost \$150,000.

The Lincoln Motor Co.'s plant at Detroit, which, it is said, will be the largest airplane engine factory in the country, is being rushed to completion.

The National Burial Device Co., Ypsilanti, Mich., has changed its name to the National Device & Drill Co. It will shortly commence the manufacture of drop-forged high-speed twist drills, reamers, cutters and special tools, which will be known as Ypsi high-speed drills. C. A. Pore is general manager.

The Reo Motor Car Co., Lansing, Mich., will begin at once on preliminary work necessary to turn out 3000 five-ton caterpillar tractors for the Government. The Reo company was awarded half of the contracts for 6000 caterpillar trucks, the other 50 per cent having been placed with the Maxwell Motor Co., Detroit.

The General Motors Truck Co., Pontiac, Mich., has received an order for either 500 or 1000 trucks of the class B type for the army.

The General Motors Truck Co., Pontiac, Mich., will commence the production of the G. M. C. Sampson tractor the latter part of January. This was formerly known as the Sampson Sieve Grip tractor, manufactured at Stockton, Cal. The company was bought out by the General Motors Co. last February and the main plant will be in Pontiac.

Cleveland

CLEVELAND, Jan. 7.

The machine tool section of the War Industries Board sent out an inquiry the past week for 30 24-in., 75 18-in. and 60 16-in. turret lathes, deliveries to be made by April 1. The S. K. F. Ball Bearing Co. the past week purchased 10 large turret lathes from a local builder. Orders for the large amount of equipment, including lathes and other machinery for the new ordnance works of the Morgan Engineering Co., are now being placed. Inquiry for this equipment originally was sent out by the Morgan company, but later purchases were turned over to the Government. The A 1 Machinery Co., Cleveland, which is equipping a plant for work on Government motor trucks, placed orders for about \$50,000 worth of machine tools. Some small lot orders are coming from Detroit automobile manufacturers for work on motor trucks. Local dealers report the market rather quiet, but look for more activity now that inventories are over. A demand has developed for punching and shearing machines for fabricating shops working on shipbuilding orders. The Chickasaw Shipbuilding Co., Mobile, Ala., is expected to come into the market shortly for a round lot of equipment.

Plans are being worked out by a committee of local manufacturers to extend the facilities of Cleveland plants for manufacturing shells and to effect greater efficiency, and with this end in view a conference with representatives of various Government departments was held in Washington the past few days. With additional capacity available shortly, one manufacturer will be supplying the Government with 3-in. shell forgings at the rate of 1,500,000 per month. Other local plants are turning out detonators and timing devices in large quantities. At present the one step in the production of an assembled shell ready for loading that is not done here is machining the forgings. Efforts are now being made to secure sufficient operating capacity in the city, without the necessity of adding to existing plants, to machine the forgings and assemble the shells so that when they are shipped they will be ready for loading.

Victor R. Browning & Co., Mansfield, Ohio, have been awarded a contract for 200 5-in. gun mounts by the Navy Department and are in the market for a large supply of machine tools, including lathes, vertical and horizontal milling machines, radial drills, grinders and shapers. They would also like to hear from sources of supply which are making parts for gun mounts.

The Bishop-Babcock-Becker Co., Cleveland, has acquired control of the Consolidated Engineering Co., manufacturer of heating specialties and industrial fans, with plants in Chicago, Ill., and Watertown, Mass. It is stated that the acquisition of these plants will make the Bishop-Babcock-Becker Co. the largest manufacturer of heating specialties in the world. A site has been acquired at Bliss Road and the Nickel Plate Railroad, where it will build a plant to which it will move from its present quarters. Construction work is contemplated shortly.

A new machine shop, to be known as the A 1 Machine Co., will be started in the Whitney Power Block, Cleveland,

by W. S. Jack, who has taken a Government order for machine work on motor truck parts. The equipment, which has about all been provided for, will consist of 35 machine tools, including 10 turret lathes.

The Elwell-Parker Electric Co., Cleveland, has taken a Government order for 27 electric tractors and 35 trucks for use in handling supplies at the embarkation depot being erected at Newark, N. J.

The Willard Storage Battery Co., Cleveland, will erect an addition, 100 x 135 ft., for which bids will be received shortly.

The Packless Quick Closing Valve Co., Cleveland, has been incorporated with a capital stock of \$100,000 by J. M. Deuring, E. M. Hobs and others.

The Federal Nut, Bolt & Machine Co., Cleveland, has increased its capital stock from \$30,000 to \$100,000.

The Templar Motors Corporation, Cleveland, has awarded a contract to the Hunkin-Conkey Construction Co., Cleveland, for an addition to its plant.

The Willys-Overland Co. has placed a contract for the erection of an addition to its Elyria, Ohio, plant, to cost about \$69,000.

The Sawyer Co., Lorain, Ohio, maker of truck parts, contemplates the erection of an addition to its plant.

The Canton Machine Shop Co., Canton, Ohio, recently incorporated with a capital stock of \$50,000, contemplates enlarging its plant. It has been operated under the name of the Canton Machine Shop. Frank DeCorps is manager.

The Wilson Rubber Co., Canton, is erecting an addition 44 x 120 ft.

The International Harvester Co. is erecting an addition to its Akron, Ohio, plant. One floor will be used for a riveting room and the remainder for a cafeteria, restaurant and hospital.

The Monarch Machine Co., Sidney, Ohio, has awarded a contract to the Bellefontaine Bridge Co., Bellefontaine, Ohio, for an addition.

The Liberty Airplane Co., Toledo, Ohio, has been incorporated with a capital stock of \$10,000 by James C. Murphy, Thomas W. Bonnell and others.

A contract for the erection of a new brass, bronze and aluminum foundry in Marion, Ohio, has been placed by Richard Lau, proprietor. The equipment has been purchased.

The American Forge & Machine Co., Canton, Ohio, is erecting a steel building, 40 x 100 ft., to be used as a heat-treating department. It will be equipped with car type furnace, heat recording instruments and quenching tanks for the scientific treatment of all forgings. Testing machines will also be installed.

Cincinnati

CINCINNATI, JAN. 7

The year 1917 was comparatively free of local labor troubles, and the records only show the following strikes that were inaugurated during the past 12 months. On April 16 the coppersmiths went out making a demand for higher wages, which strike was only partially successful from the strikers' standpoint. On May 9 the wood pattern makers struck, and this strike has not yet been officially declared off, although all of the shops have secured sufficient labor to operate up to almost full capacity. On Aug. 10 the brass molders in a few plants went out, but employers were able to fill their places in a short time.

The machine-tool builders report 1917 as the largest in the history of the business. In the first quarter of the year shops were operating largely on foreign orders from England, France, Italy and Spain. The declaration of war by the United States in April did not bring out any great demand for machine tools from domestic firms until the latter part of May. Since that time manufacturers have been hard put to supply the urgent demands from munitions makers. A few of them have orders sufficient to run them until Sept. 1918. Many plant additions were completed in 1917 and quite a number of new plants were erected, and in spite of the high cost of construction materials, other additions were under way and contemplated. The shops at Hamilton have been embarrassed from time to time on account of labor troubles, the most serious of which being a strike of the molders at the Niles Tool Works Company's plant that lasted several months. Other metal-working plants were also affected.

Machine-tool makers are complaining in many instances of the delay in receiving castings. The foundries have not been able to work to full capacity, due in some cases to coke shortage and in others to scant pig iron supply. The situation, however, has not yet reached a serious point. Builders of farm tractors have endeavored to buy machine tools lately, but they are unable to get deliveries wanted.

Second-hand tools, especially the larger sizes, are becoming scarcer, and in some cases high prices are paid for rebuilt machines that are urgently needed. Dealers carrying stocks have no machines on hand except a few small lathes and other tools not in much demand. Government work is absorbing every large machine tool that is now turned out.

The sympathetic strike of union labor at Hamilton, Ohio, that affected all metal-working plants there for three days, with one exception, proved a failure and the men returned to work Jan. 3. No other labor troubles are reported in this vicinity.

The R. K. LeBlond Machine Tool Co., Cincinnati, now has part of its plant in Hyde Park in operation and is adding further equipment. The company will not close down its plant in East End.

The Domestic Engineering Co., Dayton, Ohio, has decided to increase its capital stock from \$800,000 to \$3,500,000. It will fit up an additional plant for manufacturing farm lighting outfits.

The Dayton Automatic Products Co., Dayton, Ohio, has been incorporated with \$250,000 capital stock by G. C. Hodgson and others, and is currently reported as preparing to manufacture war munitions for the Government. Details are lacking as to its plans.

The Monarch Engineering Co., Dayton, Ohio, has been incorporated with \$150,000 capital stock by F. A. Wagner and others. It is rumored that it will make special tools.

The American Electric Works Co., Columbus, Ohio, is contemplating removing its plant on Levee Street to more commodious quarters. It manufactures and repairs electric generators and motors. E. A. Williams is president.

The Nu Ex-Fire Appliance Co., Columbus, Ohio, has increased its capital stock from \$75,000 to \$250,000 and will add to its manufacturing facilities.

The Minster Machine Co., Minster, Ohio, maker of heavy machine tools, has plans under way for doubling the capacity of its plant.

The Dayton-Wright Aeroplane Co., Dayton, Ohio, will erect a one and two-story building, 300 x 1600 ft., to cost \$1,000,000. Frank H. Smith, Inc., 120 Broadway, New York, and 1035 Reibold Building, Dayton, is in charge of design and erection.

At Dayton, Ohio, many firms are now engaged in making war munitions and late reports indicate that still larger contracts are expected. The labor situation there was fairly satisfactory throughout the year.

The Greaves Machine Tool Co., Cincinnati, has been incorporated with \$100,000 capital stock and has acquired the plant of the Bader-Geibel Machine Co., 2116 Colerain Avenue, which will be used as temporary headquarters. The new company, which is headed on the board of directors by William A. Greaves, Sr., formerly of the Greaves-Klusman Tool Co., will manufacture heavy-duty engine lathes of the geared-head and cone pulley type. It has secured a site at the corner of Spring Grove Avenue and Monmouth Street, and plans are already being prepared for a large factory building. The officers are as follows: President, William A. Greaves, Jr.; vice president, Matthew Hoerner; secretary and treasurer, William Howard Greaves, and mechanical engineer, Richard Jansch. The company is in the market for a No. 2 horizontal boring machine.

The Samuel C. Tatum Co., Cincinnati, whose plant on Colerain Avenue was bought by the Oesterlein Machine Co., has purchased a factory building at 2062 Reading Road, and will remove its equipment at an early date. The company manufactures metal specialties, including office furniture.

The Oesterlein Machine Co., Cincinnati, announces the purchase of the plant of the Samuel C. Tatum Co., on Colerain Avenue, near Monmouth Street. As soon as the tenants can vacate, it will be fitted up for the manufacture of milling machines and cutter grinders. No delays will be experienced in deliveries due to the transfer of manufacturing equipment to the new plant. The floor space in the new location will be more than three times greater than in the present building.

The Hisey-Wolf Machine Co., Cincinnati, is making some equipment additions to its plant on Colerain Avenue, and will also make changes in its heating system.

The Ferro Concrete Construction Co., Cincinnati, has contract from the Procter & Gamble Co., Cincinnati, for six buildings to be constructed as additions to the latter company's plant at Port Ivory, Staten Island, N. Y.

The Federal Machine & Tool Co., Dayton, Ohio, has been incorporated with \$25,000 capital stock by F. H. Poppelmeyer and others. Press dispatches state that it will succeed the Reliable Tool & Machine Co., whose plant is located at 429 East Third Street.

The Manufacturers' Production Co., Dayton, Ohio, is now occupying a plant at Second Street and Dale Avenue, for-

merly operated by the Stevens Mfg. Co. The company is adding equipment for the manufacture of tools and mechanical specialties.

The American Water Motor Co., Dayton, Ohio, has purchased a lot in the western part of the city on which it expects to erect a plant for the manufacture of water motor-driven washing machines and hardware specialties.

The Bowen-Beardsley Co., Columbus, Ohio, has been incorporated with \$10,000 capital stock by C. N. Bowen, E. L. Beardsley and others and will establish a metal stamping plant.

The Central South

LOUISVILLE, KY., Jan. 7.

Business, except as hampered by transportation delays and difficulties in the way of obtaining materials, is good. Tools are in strong demand and second-hand equipment is being sought for eagerly by buyers representing dealers from other sections.

The Continental Car Co. of America, Louisville, has increased its capital from \$20,000 to \$100,000. It has recently been making additions to its plant.

The Bailey Coal Co., Blanche, Ky., is in the market for a 75-hp. boiler and for a 40-hp. twin hoisting rig.

The Shawnee Coal Co., Harlan, Ky., will buy power equipment, including air compressor of 1000 cu. ft. per min. capacity, boilers and receiver.

The American Metallic Packing Co., Lexington, Ky., is in the market for a large-size hoisting engine and a six to eight-ton steam locomotive, 42-in. gage, both in good condition.

Moore & McFerren, Memphis, Tenn., will rebuild their sawmill recently destroyed by fire at a loss of \$25,000.

The Southern Railway will establish a workshop and engine repair shed, 30 x 80 ft., at Bull's Gap, Tenn.

John B. Ransom & Co., Nashville, Tenn., will install sawmills on timber holdings acquired from the Bon Air Coal & Iron Corporation, Nashville, Tenn.

The A. T. Hallock Lumber Co., Jackson, Tenn., will establish a box factory for which it is purchasing machinery.

The Volunteer Mfg. Co., Nashville, Tenn., has increased its capital stock from \$75,000 to \$100,000.

The shell-making department of the Columbian Iron Works, Chattanooga, Tenn., is reported to have been closed down for making of additions to the present capacity of 750 6-in. shells per day.

The Roy C. Whayne Supply Co., Louisville, is in the market for a second-hand 10-in. or 12-in. belt-driven centrifugal pump.

A. W. Lucas, Paducah, Ky., has taken over the plant of the Mutual Wheel Co., and proposes to equip it for operation.

Elrod & Co., Somerset, Ky., are in the market for a second-hand DeLancey spoke lathe in good condition and for immediate shipment.

The West Virginia & Kentucky Coal Co., Uz, Ky., is asking for prices on two 150-hp. generators, a 30-hp. engine and a 150-kw. generator.

The Southern Machinery Co., Knoxville, Tenn., is in the market for a 40-ph., 250-volt, direct-current compound wound motor; 15 or 20-hp. reversible link-motion, single or double-cylinder engine; one 40-hp. engine or two 20-hp. crude-oil, internal combustion engines, and an electrically driven, centrifugal pump, 2-in. discharge.

The proposed plant of the Harriman Mine Car Mfg. Co., Harriman, Tenn., will consist of three one and two-story buildings to cost \$25,000. It will be equipped as a foundry and machine shop with bending and shearing departments. W. G. Baker is president and manager.

The Oil Well Supply Co., Parkersburg, W. Va., will build a one-story plant, 50 x 140 ft., to cost \$25,000. R. S. Lemon is general manager.

The Whitney-McNeill Electric Co., Augusta, Ga., has been incorporated with a nominal capital of \$6,000 by J. B. Whitney and Joseph B. McNeill to manufacture electric fixtures.

The Doss Rubber & Tube Co., Atlanta, Ga., will erect a one-story, brick and stone building, 55 x 140 ft., at Fort McPherson, Ga., for the manufacture of automobile tires. It is expected to have the plant ready for operation in April. N. C. Doss is president.

The Butters-Camp Mfg. Co., Atlanta, Ga., has been organized to manufacture milling and saw-sharpening machinery. W. H. Camp and R. H. Butters head the company.

The North American Fluorspar & Lead Corporation, Smithland, Ky., is planning for a new grinding and separating works to cost about \$75,000. It recently increased its capital to \$1,000,000. F. B. Moodie is president.

St. Louis

ST. LOUIS, Mo., Jan. 7.

The Buckeye Cotton Oil Mill, Little Rock, Ark., owned by Procter & Gamble, Cincinnati, Ohio, was burned recently with a loss of \$500,000. The plant and machinery will be replaced at once.

S. R. Morgan & Co., Little Rock, Ala., will install an electric light and power plant at Stuttgart, Ark.

Wiggins, Miss., will equip an electric light and waterworks plant. Xavier A. Kramer, Magnolia, Miss., is the engineer.

The Arkansas Foundry Co., Little Rock, Ark., has leased new quarters for the manufacture of gray iron castings.

The Ada Iron Works, Ada, Okla., will equip a plant to manufacture brass and iron castings. William Gilbert is manager.

The International Cotton Picker Co., Oklahoma City, Okla., James W. Dinsmore and F. W. Barnardo interested, will equip a plant to manufacture cotton picking machinery.

The Arkansas Motor Truck Co., Little Rock, Ark., S. N. Bolton, R. C. Wilson and J. O. Evatt interested, will equip a plant for the manufacture of motor trucks.

The Wichita Falls & Northwestern Railway, A. W. Eichenberger treasurer, will equip a mechanically operated coal chute at Frederick, Okla., to replace one destroyed by fire.

The Commissioners of the Port of New Orleans, La., suite 200, New Orleans Court Building, are receiving bids for a complete fire protection system, including motor driven, centrifugal pumps, electrical installation therefor, and other machinery for the cotton warehouse and terminal under construction.

The National Cast Iron Pipe Co., Birmingham, Ala., will build a new one-story foundry, 50 x 200 ft., provided with facing and drilling machines for the manufacture of flange pipe, cupolas and crane.

Texas

AUSTIN, Jan. 5.

Unusual activity is noted in the installation of irrigation pumping plants, particularly in western and southern Texas, many being of large capacity.

The Commonwealth Electric Light & Water Co., San Benito, will enlarge its power house and install a 100-hp. engine and other equipment.

R. T. Robinson, San Antonio, has purchased the electric light and power plant and ice factory of the Sabinal Light & Ice Co., Sabinal, which will be enlarged and improved.

R. B. Collier will install an irrigation pumping plant on the Brazos River, near Hearne.

R. L. Barnett, Karnes City, will install an irrigation pumping plant on the San Antonio River, near that city.

The Rio Grande Valley Farms Co., El Paso, will build a dam near Van Horne and install a pumping plant to irrigate about 9000 acres.

L. H. Browne, San Antonio, contemplates building a dam on Wilson Creek, near Bay City, and will install a pumping plant to irrigate 800 acres.

Waco will issue \$225,000 in bonds for the construction of a sewage disposal plant.

The Rio Grande Public Service Corporation, McAllen, will install additional equipment in its electric light and power plant to cost \$40,000.

The Wichita Mill & Elevator Co., Wichita Falls, has increased its capital stock from \$300,000 to \$1,300,000 for the purpose of enlargement. Additional equipment will be installed.

San Francisco

SAN FRANCISCO, Jan. 7.

The United States Steel Corporation's warehouse in San Francisco has been taken over by the Government and turned over to the Union Iron Works. The building will be used in the construction of submarine chasers. It is 240 x 400 ft., and before being used for this purpose will have to be built about 15 ft. higher. This will be accomplished by jacking it up and building the new walls under the present structure.

The Moore & Scott Shipyards have been awarded a Government contract for 16 more steel vessels, according to a dispatch from R. S. Moore, who is in the East. Six will be 10,000-ton oil tank vessels and 10 will be 9400-ton freighters.

The American Can Co. has asked a permit of the City Council, Oakland, Cal., to erect a factory to cost \$1,250,000 on 22 acres of water front land. The plant will employ 700 men at the start and later this number will be increased to 1000.

The Main Street Iron Works, San Francisco, has been incorporated by A. Sperry, A. Z. High, A. deBretteville, James E. Deacon and F. J. O'Neill with a capital stock of \$50,000 to do a general iron, steel and shipbuilding business.

The Blessing Mfg. Co. has been incorporated with a capital of \$20,000 by H. H. Traub, J. W. Lederman, E. D. Lederman, L. Van Orden, T. E. Pawlicki, all of San Francisco, to manufacture tools and machinery for the development of power by gas, steam, electricity, etc.

The Chicago Pneumatic Tool Co. has established a direct factory-branch at 627 Howard Street, San Francisco. A. T. Kalas has been appointed manager.

The Community Mfg. Co. will start building its new tractor plant at Burbank shortly. The company, which is capitalized for \$3,000,000, will manufacture light tractors at a low cost. The plant will include machine shops, foundries and assembling quarters.

The Atchison, Topeka & Santa Fe Railroad has announced plans for additional improvements to its shops at San Bernardino, to cost approximately \$300,000, which include a blacksmith shop to more than double the present one and an electric power plant. The blacksmith shop will have 20 forges, eight steel hammers and other machinery.

The Baker Iron Works, North Broadway, Los Angeles, will build a one-story foundry, 70 x 160 ft., to cost \$10,900. A 15-ton traveling crane will be installed.

The Magnetic Signal Co., Los Angeles, has been incorporated with a capital of \$100,000 by Ross T. Hockcox, E. U. Skinner and Lloyd H. Coffman.

The Block-Scherfee Water Carburetor Co., Los Angeles, has been incorporated with a capital of \$20,000 to manufacture a special carburetor. James F. Scherfee and Benjamin B. Block, Los Angeles, are the principal incorporators.

The Republic Motor Truck Co., Alma, Mich., is preparing for the installation of equipment for its assembling works at Los Angeles. The new plant, it is said, will cost \$100,000 and will be equipped to handle all Pacific coast business. F. W. Ruggles is president.

The Elbe-Busch Motor Co., Los Angeles, has been incorporated with a capital of \$20,100 by W. L. Elbe, W. H. Hahn and U. B. Busch to manufacture motor equipment.

The Longhead Aircraft Mfg. Co., Santa Barbara, Cal., has increased its capital from \$40,000 to \$250,000 and contemplates the construction of an addition to its plant.

The Coachella Power & Irrigation Co., Los Angeles, is contemplating the construction of a series of power plants in the Coachella section, Riverside County, and Morongo Valley, San Bernardino County. The project is estimated to cost about \$4,000,000. F. H. Merrill and W. B. Baker, Los Angeles, head the company.

Canada

TORONTO, Jan. 7.

The Herbert Morris Crane & Hoist Co., Ltd., Niagara Falls, Ont., formerly of Toronto, announces that its plant at Niagara Falls is completed and is ready to turn out chain blocks, trolleys, traveling chain blocks, jib cranes and overhead traveling cranes.

The Canadian Cartridge Co., Hamilton, Ont., has been awarded a contract for the manufacture of brass cartridge cases for the United States which will keep the plant in operation for several months.

The elevator at St. Boniface, Man., owned by the Northern Elevator Co. was completely destroyed by fire Dec. 23, with a loss estimated at \$250,000.

Brantford, Ont., will build a pumping station to cost \$3,000. T. Harry Jones is engineer.

Renfrew, Ont., proposes to purchase new pumps for its waterworks plant. J. R. Stewart is engineer.

The Dominion Government is preparing specifications for a shipbuilding plant at Catalina, Newfoundland, to cost \$2,000,000.

J. A. Johnston, 171 King Street East, Toronto, is in the market for a 12 or 14-hp. portable steam engine.

The Spruce Falls Pulp & Paper, Ltd., 84 King Street East, Toronto, has acquired property in the Kapuskasing District, northern Ontario, and will build a pulp and paper plant to cost \$1,000,000.

The Bond Engineering Works, foot of Cherry Street, Toronto, will build an addition to its foundry to cost \$8,500. Contracts have been awarded.

Alliston, Ont., proposes to electrify its pumping plant at a cost of \$6,000. William C. Taggart is engineer.

O'Connors, Ltd., Montreal, has been incorporated with a capital stock of \$100,000 by Andrew P. O'Connor, Sorel, Que.; Edward A. D. Morgan, Westmount, Que.; Salluste Lavery, Longueuil, Que., and others to manufacture iron, steel, metals, machinery, etc.

The Regal Cutlery Co., Ltd., Toronto, has been incorporated with a capital stock of \$50,000 by Eldon Moir, Donald L. McDonald, 155 Glendale Avenue; John Campbell and others.

The Electric Smelting Co. of Brantford, Ltd., Brantford, Ont., has been incorporated with a capital stock of \$45,000 by Abraham Goodwin, Henry M. McIntyre, John Ker and others to manufacture machinery and metal articles.

Douglas Bremner & Co., Ltd., Montreal, has been incorporated with a capital stock of \$50,000 by Walter S. Johnson, William S. Wilson, Alexander R. Hall and others of Montreal, to manufacture machinery, tools, etc.

The Rae Machine Tools Works, Ltd., Hamilton, Ont., has been incorporated with a capital stock of \$45,000 by John S. Duggan, 6 Adelaide Street East; William B. Sturup, Craig McKay and others to manufacture machinery, tools, metal goods, etc.

Damage estimated at \$30,000 was done to the plant of the Montreal Light, Heat & Power Co., Montreal, Dec. 24.

The stock and buildings of the Cockshutt Flow Co., Edmonton, Alberta, were destroyed by fire Dec. 26 with a loss of \$40,000.

The Cross Press & Sign Co., Ltd., Montreal, has been incorporated with a capital stock of \$30,000 by Robert C. McMichael, Francis G. Bush, George R. Drennan and others to manufacture signs, etc.

The Torrington Co., Ltd., Upper Bedford, Que., has been incorporated with a capital stock of \$150,000 by Walter R. L. Shanks, Michael J. O'Brien, Herbert W. Jackson and others of Montreal, to manufacture sewing machines, accessories, tools, etc.

The Co-operative Shipping Co., Ltd., Montreal, has been incorporated with a capital stock of \$1,000,000 by Waldo W. Skinner, George G. Hyde, Ronald C. Grant and others to build ships.

The Canadian Co-operative Marine Corporation, Ltd., Montreal, has been incorporated with a capital stock of \$1,000,000 by William G. Pugsley, C. M. Palliser, Ronald C. Grant and others to build vessels.

The Beaver Truck & Tractors, Ltd., Walkerville, Ont., has been incorporated with a capital stock of \$500,000 by Edward P. Brownell, Toronto; Charles J. Stodgell, Henry P. Crocker and others of Walkerville, to manufacture motor trucks, farm tractors, aeroplanes, etc.

The plant of the Rapid Tool & Machine Co., Ltd., Lachine, Que., was totally destroyed by fire Dec. 30 with a loss of \$55,000.

A. E. Augustine, box 116, Port Colborne, Ont., is in the market for a 15-hp. electric motor with starter, or starter separate.

The Swift Canadian Co., Ltd., St. Clair Avenue and Keele Street, Toronto, is in the market for a 50-hp. locomotive type boiler.

The Union Cement Co., Ltd., Owen Sound, Ont., will make additions to its plant which will give it a daily capacity of 2500 bbl. On account of the scarcity and difficulty of securing machinery, second-hand equipment will be purchased.

Fire caused \$75,000 damage Dec. 30 to the premises of the Studebaker Corporation, Windsor, Ont.

Fitzgerald Brothers, Hillsdale, Ont., are in the market for a 12 to 16-hp. portable steam engine.

The Alberta Flour Mills, Ltd., Calgary, Alta., is completing plans for the erection of a new mill with a daily capacity of 6000 bbl. to cost \$1,500,000.

The P. Q. Lumber Co., Dalhousie, N. B., has commenced the erection of a sawmill estimated to cost \$100,000.

The St. John Shipbuilding Co., St. John, N. B., will commence at once the erection of a plant to build steel and wooden ships. Thomas Nagel is manager.

The Paper & Hardware Products, Ltd., Montreal, manufacturer of roofing hardware and iron washers, has leased for a number of years the Ausable Chasm Nail Works at Keeseville, N. Y., to take care of its export business. It is equipping the factory with power presses, nail machines and washer machines and in about six weeks will be ready to fill all American orders from Keeseville. The company is at present in the market for wire-drawing machinery, either new or second-hand.